GOLD-01112

GoldStar

SERVICE MANUAL

MODEL : **RE44NZ21RB**

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SVC. SHEET ....

SAFETY PRECAUTIONS

IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by ⚠ in the Schematic Diagram and Replacement Parts List.
It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards.
Do not modify the original design without permission of manufacturer.

General Guidance

An **isolation Transformer should always be used** during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks.

It will also protect the receiver and it's components from being damaged by accidental shorts of the circuitry that may be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this TV receiver is blown, replace it with the specified.

When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1W), keep the resistor 10mm away from PCB.

Keep wires away from high voltage or high temperature parts.

Due to high vacuum and large surface area of picture tube, extreme care should be used in **handling the Picture Tube.** Do not lift the Picture tube by it's Neck.

X-RAY Radiation

Warning:

The source of X-RAY RADIATION in this TV receiver is the High Voltage Section and the Picture Tube.
For continued X-RAY RADIATION protection, the replacement tube must be the same type tube as specified in the Replacement Parts List.

To determine the presence of high voltage, use an accurate high impedance HV meter.

Adjust brightness, color, contrast controls to minimum.
Measure the high voltage.
The meter reading should indicate
23.5 ¡ 1.5KV: 14-19 inch, 26 ¡ 1.5KV: 19-21 inch,
29.0 ¡ 1.5KV: 25-29 inch, 30.0 ¡ 1.5KV: 32 inch
If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.

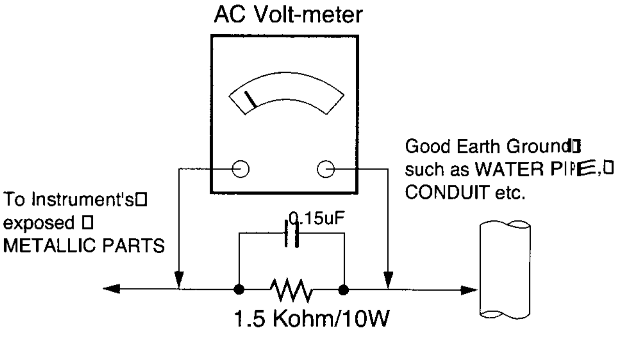
Before returning the receiver to the customer,

always perform an **AC leakage current check** on the exposed metallic parts of the cabinet, such as antennas, terminals, etc., to be sure the set is safe to operate without damage of electrical shock.

Leakage Current Cold Check(Antenna Cold Check)
With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on position, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc.
If the exposed metallic part has a return path to the chassis, the measured resistance should be between 1MΩ and 5.2MΩ.
When the exposed metal has no return path to the chassis the reading must be infinite.
An other abnormality exists that must be corrected before the receiver is returned to the customer.

Leakage Current Hot Check (See below Figure)
Plug the AC cord directly into the AC outlet.
Do not use a line Isolation Transformer during this check.
Connect 1.5K/10watt resistor in parallel with a 0.15uF capacitor between a known good earth ground (Water Pipe, Conduit, etc.) and the exposed metallic parts.
Measure the AC voltage across the resistor using AC voltmeter with 1000 ohms/volt or more sensitivity.
Reverse plug the AC cord into the AC outlet and repeat AC voltage measurements for each exposed metallic part. Any voltage measured must not exceed 0.75 volt RMS which is corresponds to 0.5mA.
In case any measurement is out of the limits specified, there is possibility of shock hazard and the set must be checked and repaired before it is returned to the customer.

Leakage Current Hot Check circuit



SERVICING PRECAUTIONS

CAUTION: Before servicing receivers covered by this service manual and its supplements and addenda, read and follow the SAFETY PRECAUTIONS on page 3 of this publication.

NOTE: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. Remember: Safety First.

General Servicing Precautions

1. Always unplug the receiver AC power cord from the AC power source before;
    a. Removing or reinstalling any component, circuit board module or any other receiver assembly.
    b. Disconnecting or reconnecting any receiver electrical plug or other electrical connection.
    c. Connecting a test substitute in parallel with an electrolytic capacitor in the receiver.
    CAUTION: A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.
    d. Discharging the picture tube anode.
2. Test high voltage only by measuring it with an appropriate high voltage meter or other voltage measuring device (DVM, FETVOM, etc) equipped with a suitable high voltage probe. Do not test high voltage by "drawing an arc".
3. Discharge the picture tube anode only by (a) first connecting one end of an insulated clip lead to the degaussing or kine aquadag grounding system shield at the point where the picture tube socket ground lead is connected, and then (b) touch the other end of the insulated clip lead to the picture tube anode button, using an insulating handle to avoid personal contact with high voltage.
4. Do not spray chemicals on or near this receiver or any of its assemblies.
5. Unless specified otherwise in this service manual, clean electrical contacts only by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable non-abrasive applicator; 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength)
    CAUTION: This is a flammable mixture.
    Unless specified otherwise in this service manual, lubrication of contacts in not required.
6. Do not defeat any plug/socket B+ voltage interlocks with which receivers covered by this service manual might be equipped.
7. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
8. Always connect the test receiver ground lead to the receiver chassis ground before connecting the test receiver positive lead.
    Always remove the test receiver ground lead last.
9. Use with this receiver only the test fixtures specified in this service manual.
    CAUTION: Do not connect the test fixture ground strap to any heat sink in this receiver.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid-state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed to prevent potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
    CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range or 500 ¡É to 600 ¡É
2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.
3. Keep the soldering iron tip clean and well tinned.
4. Thoroughly clean the surfaces to be soldered. Use a mall wire-bristle (0.5 inch, or 1.25cm) brush with a metal handle. Do not use freon-propelled spray-on cleaners.
5. Use the following unsoldering technique
    a. Allow the soldering iron tip to reach normal temperature. (500 ¡É to 600 ¡É)
    b. Heat the component lead until the solder melts.
    c. Quickly draw the melted solder with an anti-static, suction-type solder removal device or with solder braid.
    CAUTION: Work quickly to avoid overheating the circuitboard printed foil.
6. Use the following soldering technique.
    a. Allow the soldering iron tip to reach a normal temperature (500 ¡É to 600 ¡É)
    b. First, hold the soldering iron tip and solder the strand against the component lead until the solder melts.

c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.
CAUTION: Work quickly to avoid overheating the circuit board printed foil.

d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.

IC Remove/Replacement

Some chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined in paragraphs 5 and 6 above.

Removal

1. Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.
2. Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

Replacement

1. Carefully insert the replacement IC in the circuit board.
2. Carefully bend each IC lead against the circuit foil pad and solder it.
3. Clean the soldered areas with a small wire-bristle brush.
(It is not necessary to reapply acrylic coating to the areas).

"Small-Signal" Discrete Transistor Removal/Replacement

1. Remove the defective transistor by clipping its leads as close as possible to the component body.
2. Bend into a "U" shape the end of each of three leads remaining on the circuit board.
3. Bend into a "U" shape the replacement transistor leads.
4. Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the "U" with long nose pliers to insure metal to metal contact then solder each connection.

Power Output, Transistor Device Removal/Replacement

1. Heat and remove all solder from around the transistor leads.
2. Remove the heat sink mounting screw (if so equipped).
3. Carefully remove the transistor from the heat sink of the circuit board.
4. Insert new transistor in the circuit board.
5. Solder each transistor lead, and clip off excess lead.
6. Replace heat sink.

Diode Removal/Replacement

1. Remove defective diode by clipping its leads as close as possible to diode body.
2. Bend the two remaining leads perpendicular y to the circuit board.
3. Observing diode polarity, wrap each lead of the new diode around the corresponding lead on the circuit board.
4. Securely crimp each connection and solder it.
5. Inspect (on the circuit board copper side) the solder joints of the two "original" leads. If they are not shiny, reheat them and if necessary, apply additional solder.

Fuse and Conventional Resistor Removal/Replacement

1. Clip each fuse or resistor lead at top of the circuit board hollow stake.
2. Securely crimp the leads of replacement component around notch at stake top.
3. Solder the connections.
CAUTION: Maintain original spacing between the replaced component and adjacent components and the circuit board to prevent excessive component temperatures.

Circuit Board Foil Repair

Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board causing the foil to separate from or "lift-off" the board. The following guidelines and procedures should be followed whenever this condition is encountered.

At IC Connections

To repair a defective copper pattern at IC connections use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections).

1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary).
2. carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.
3. Bend a small "U" in one end of a small gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.
4. Route the jumper wire along the path of the out-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area and clip off any excess jumper wire.

At Other Connections

Use the following technique to repair the defective copper pattern at connections other than IC Pins. This technique involves the installation of a jumper wire on the component side of the circuit board.

1. Remove the defective copper pattern with a sharp knife.
Remove at least 1/4 inch of copper, to ensure that a hazardous condition will not exist if the jumper wire opens.
2. Trace along the copper pattern from both sides of the pattern break and locate the nearest component that is directly connected to the affected copper pattern.
3. Connect insulated 20-gauge jumper wire from the lead of the nearest component on one side of the pattern break to the lead of the nearest component on the other side.
Carefully crimp and solder the connections.
CAUTION: Be sure the insulated jumper wire is dressed so the it does not touch components or sharp edges.

SPECIFICATIONS

NOTE : Specifications and others are subject to change without notice for improvement.

▪ Scope

This specification can be applied to all the Projection television related to MP-015D Chassis.

Model Name	Market Place	Remark
RE-44/49/56NZ21RB	Europe(except France)	- RB :Teletext
RT-44/49/56NZ21RB/RP	China,Asia,Africa, Middle East	- RP :W/O Teletext option
RL-44/49/56NZ21RB	France	

▪ Test Condition

1) Temperature :25¡ 5°C
2) Relative Humidity:65¡ 10%
3) PowerVoltage:Standard input voltage(110/240V@50/60Hz) But Standard input voltage mark value is marked by model.
4) Use the parts only designated in B.O.M.,PARTS SPEC.,or drawings.
5) Follow each drawing or spec for spec and performance of parts,based upon P/N of B.O.M
6) Warm up TV set for more than 20min. before the measurement.

▪ Test and Inspection Method

1) performance:Follow the Standard of LG TV test
2) Standards of Etc requirement

Model	Market	Remark	Appliance
RE/RL- 44/49/56NZ21RB	EUROPE	SAFETY:CB EMI:EN55013 EMS:EN55020	OK

▪ General Specification

★ Mark:Option Item

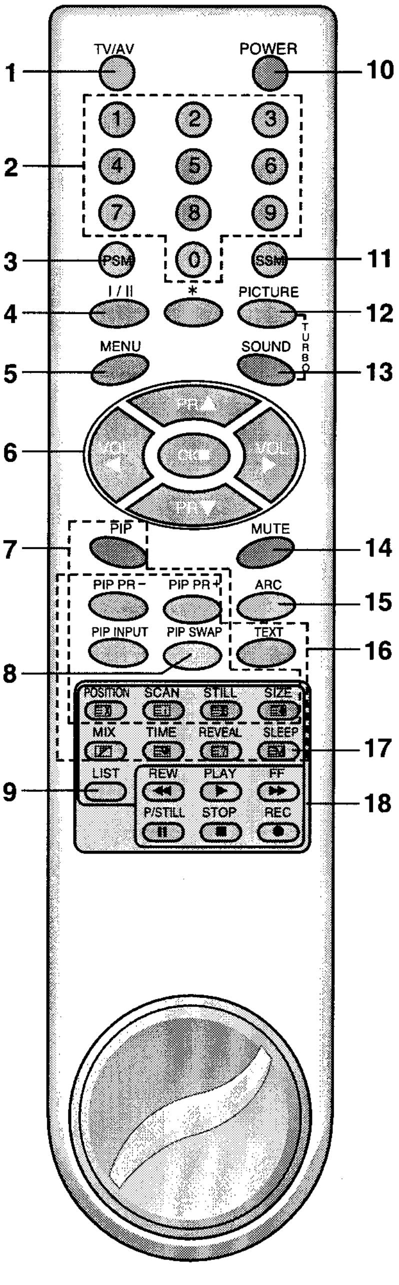
No	Item		Specification	Remark
1	Receiving System	RE	PAL,SECAM-BG PAL,SECAM-DK,PAL-II'	AV can be input NTSC-M
		RL	PAL,SECAM-BG SECAM-LL'	
		RT	PAL,SECAM-BG PAL,SECAM-DK,PAL-II' NTSC-M	
2	Available Channel		1)VHF:E2~E12 2)UHF:E21~E69 3)CATV:S1~S20 4)HYPER:S21~S41	
			LL'VHF:B,C,D	★ (RL model for France)
3	Input Voltage		AC 110-240V 50/60 Hz	★ (RT model w/o China),Australia
			AC 230V 50/60 Hz	★ (RE,RL, China /Australia model)
4	Market	**RE**	Europe except France	
		RL	France	
		RT	Asia,Africa,Middle East	
5	Screen Size		44/49/56 inch	
6	Aspect Ratio		16:9	
7	Tuning System		FVS 100Program	★ (With Teletext model)
			FVS 200Program	★ (W/O Teletext model)
8	TUNER IF		38.9 MHz	

▪ Feature and Function

No	Item		Specification		Remark
1	Feature	AV Input	1	V/L/R	Side
			2	V/L/R	★ (Rear,RT model)
		AV Output	1	V/L/R	★ (Rear,RT model)
		Component Input	2	COMPONENT1 :480i/L/R COMPONENT2 :480p/L/R	Rear
		S-Video Input	2	Y/C	Side 1,Rear(SCART) 1
		SCART	3	Full SCART(with RGB Input) :1 Half SCART : 1 (AV In/out) Half SCART : 1 (AV In,YC In)	★ (Rear,RE,RL model)
2	Key	Local Key	POWER,MENU,VOL(◄,►),PR(▲,▼) TV/AV,OK(■)		Front
		Remocon	RC-5 Code		
3	Picture	PSM	Dynamic/Standard/Mild/Game/User		
		User Control	Contrast/Brightness/Color/Sharpness/Tint		Tint:NTSC system only
		ACMS	○		★With out Australia
4	Sound	SSM	Music/Movie/Sports/User Dolby Virtual		★
		AVL	On/Off		
5	Sleep Timer		On/Off		
6	Special	Language	Multi language		★
		Auto Sleep	On/Off		
		Teletext	TOP/FLOF/LIST 128 page		★
7	Etc.	Convergence	AUTO CONVERGENCE		
		Comb Filter	Digital comb filter		
		SVM	○		
		ARC	16:9/ZOOM1/ZOOM2/AUTO/4:3		

CONTROL DESCRIPTIONS

All the functions can be controlled with the remote control handset. Some functions can also be adjusted with the buttons on the front panel of the set.
Only use the remote control handset supplied with this set. If you use other remote control handsets, they'll not be able to use.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18
TV/AV
POWER
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4
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6
7
8
9
PSM
0
SSM
I / II
*
PICTURE
MENU
SOUND
TURBO
PR▲
VOL ◀
OK
VOL ▶
PR▼
PIP
MUTE
PIP PR-
PIP PR+
ARC
PIP INPUT
PIP SWAP
TEXT
POSITION
SCAN
STILL
SIZE
MIX
TIME
REVEAL
SLEEP
LIST
REW
PLAY
FF
P/STILL
STOP
REC

Remote control handset

Before you use the remote control handset, please install the batteries. See the next page.

1. **TV/AV**
   selects TV or AV mode.
   clears the menu / text from the screen.
   switches the set on from standby.
2. **NUMBER BUTTONS**
   switches the set on from standby or directly select a number.
3. **PSM (Picture Status Memory)**
   recalls your preferred picture setting.
4. **I/II**
   selects the language during dual language broadcast.
   selects the sound output (option).
5. **MENU**
   selects a menu.
6. **▲ / ▼ (Programme Up/Down)**
   selects a programme or a menu item.
   switches the set on from standby.
   ◀ / ▶ (Volume Down/Up)
   adjusts the volume.
   adjusts menu settings.
   OK
   accepts your selection or displays the current mode.
7. **PIP BUTTONS**
   PIP
   switches the sub picture on or off.
   PIP PR +/-
   selects a programme for the sub picture.
   PIP SWAP
   alternates between main and sub picture.
   PIP INPUT
   selects the input mode for the sub picture.
   SIZE
   adjusts the sub picture size.
   STILL
   freezes motion of the sub picture.
   POSITION
   relocates the sub picture in clockwise direction.
   SCAN
   switches on or off the programme scan mode through 12 sub pictures.
8. **PIP SWAP**
   returns to the previously viewed programme.
9. **LIST**
   displays the programme table.

10. POWER
switches the set on from standby or off to standby.

11. SSM (Sound Status Memory)
recalls your preferred sound setting.

12. TURBO PICTURE BUTTON
selects Turbo picture.

13. TURBO SOUND BUTTON
selects Turbo sound.

14. MUTE
switches the sound on or off.

15. ARC (Aspect Ratio Control)
changes the picture format.

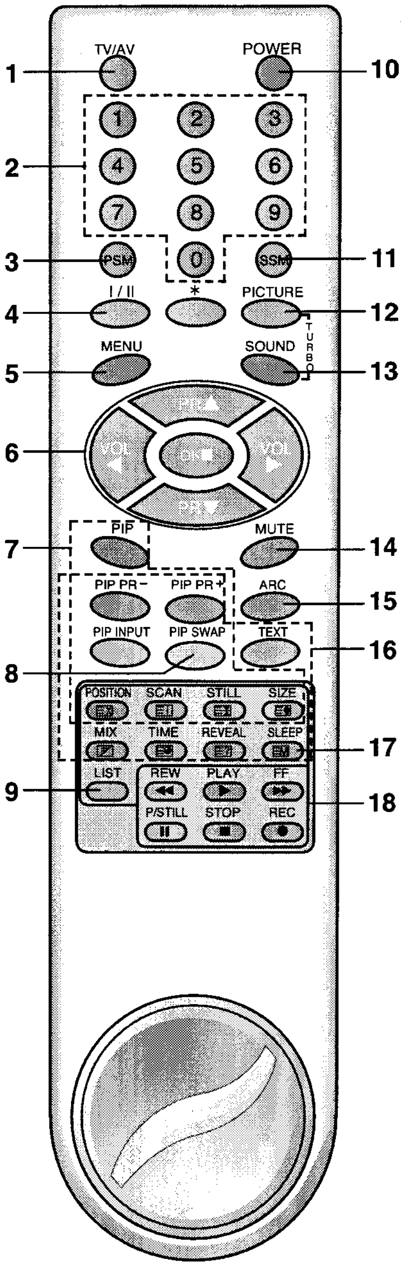
16. TELETEXT BUTTONS (option)
These buttons are used for teletext.
For further details, see the 'Teletext' section.

17. SLEEP
sets the sleep timer.

18. VCR BUTTONS
control a LG video cassette recorder.

★ : NO FUNCTION

Note : In teletext mode, the **PIP PR +/-, PIP SWAP** and **PIP INPUT** buttons are used for teletext function.


TV/AV
POWER
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MENU
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VOL ►
PR ▼
PIP
MUTE
PIP PR −
PIP PR +
ARC
PIP INPUT
PIP SWAP
TEXT
POSITION
SCAN
STILL
SIZE
MIX
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REVEAL
SLEEP
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P/STILL
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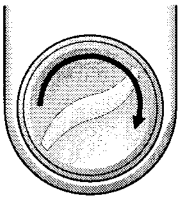
Internal generator charge

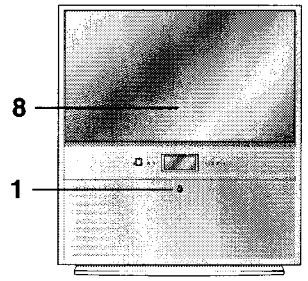
The remote control handset can be charged with the internal electric generator. To charge the remote control handset do the followings;

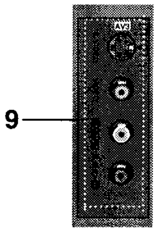
1. In first use,
   20 rotation of the handle in the arrow direction as picture below -> waiting for one minute -> 20 rotation again -> waiting for one minute again -> 20 rotation again -> beginning to use
2. In usual use
   5 or 6 rotation -> resuming to use



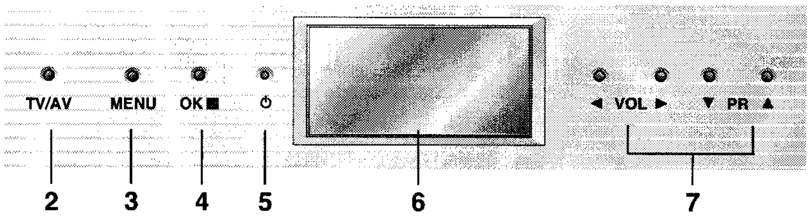
Note : Do not rotate the handle too rapidly for the protection of the remote control handset.

Front panel





(Side panel)



1. **MAIN POWER**
   switches the set on or off.

2. **TV/AV**
   selects TV or AV mode.
   clears the menu / text from the screen.
   switches the set on from standby.

3. **MENU**
   selects a menu.

4. **OK**
   accepts your selection or displays the current mode.

5. **POWER/STANDBY INDICATOR**
   illuminates brightly when the set is in standby mode
   goes off when the set is switched on.

6. **LED (Light Emitting Diode) DISPLAY**
   illuminates brightly when the set is switched on.

7. **◄ / ► (Volume Down/Up)**
   adjusts the volume.
   adjusts menu settings.
   ▲ / ▼ (Programme Up/Down)
   selects a programme or a menu item.
   switches the set on from standby.

8. **REMOTE CONTROL SENSOR**

9. **AUDIO/VIDEO IN SOCKETS (AV3)**
   Connect the audio/video out sockets of external equipment to these sockets.
   S-VIDEO/AUDIO IN SOCKETS (S-AV)
   Connect the video out socket of an S-VIDEO VCR to the **S-VIDEO** socket.
   Connect the audio out sockets of the S-VIDEO VCR to the audio sockets as in **AV3**.

* **CASTERS (on the bottom)**
  turn and move the set easily.

ADJUSTMENT INSTRUCTIONS

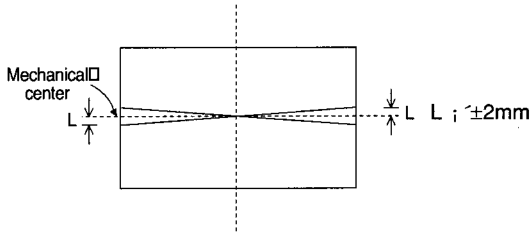
• Raster Slope/Focus 1th Adjustment

1. Preliminary steps

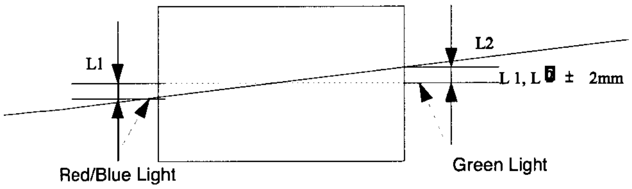
1) Receive the EU 05 CH signal.
2) Adjustment Lens focus and Electric provisionally.
3) Set the convergence on RESET.
    a.Adjustment mode:Press the SVC key and then press the ≡M key.
    b.Data reset : Press 5 KEY and then OK key.
    c.Adjustment mode cancellation : Press the ≡M key.

2. Adjustment

1) Display only the Green raster using lens covers to block Red and Blue.
2) Rotate the Green DY and tilt the screen like the figure below.



3) Make 2color raster with Red or Blue and Green.
4) Superimpose the slope of red and blue raster onto that of the Green.



Note)
When adjusting raster slope, loosen the DY and retighten it after adjusting.Never rotate and adjust the fixed DY without loosening it.

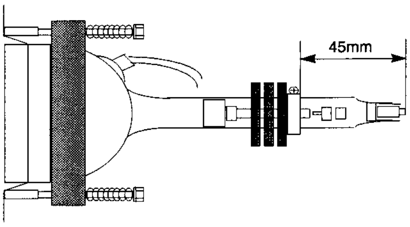
• Beam Alignment Adjustment

1. Test Equipment

Signal Generator that can produce DOT pattern (401NPS or 5518/5418)

2. Preparation

1) Heat run over 60 minutes.
2) Pre-adjust Raster slope,Raster position & Lens focus&centering Magnet.
3) Verify that the Magnet is located 45mm from the end of PRT.
4) Receive DOT pattern.

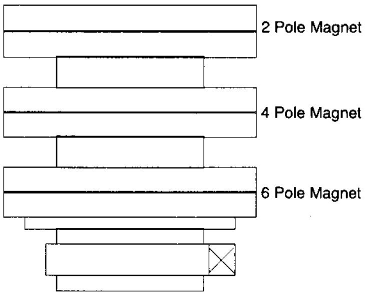


3. 2-Pole Magnet Adjustment

1) Display only the Green raster using lens covers to block Red and Blue.
2) Check the center position of DOT pattern on the center of the screen after turning Green focus volume left.
3) Turning green focus volume right and adjust 2-Pole magnet so the position to coincide that of item 2).
4) Adjust not to shift the screen by turning green focus volume left & right.
5) If the screen shifts, readjust 2)~4).
6) Do the same method in Red and Blue. Here, be careful not to be stained.

4. Beam Shape (4 & 6-Pole Magnet) Adjustment

1) Do after adjustment of the 2-Pole magnet .
2) Display only the Green raster using lens covers to block Red and Blue and turn the focus volume right.
3) Using the 4 & 6-pole magnets make adjustments so the DOT in the center is a perfect circle.
4) Follow the same method in Red & Blue.
5) Fasten the Magnet after adjustment.
6) Adjust focus volume accurately and then adjust raster center.



• Centering Magnet Adjustment

1. Preliminary steps

1) Tune the TV set to receive a EU 05 CH.
2) Press the keys of Remote Controller for adjustment to reset the convergence.
    a.Adjustment mode:Press the SVC key and then press the ≡M key.
    b.Data reset : Press 5 KEY and then OK key.
    c.Adjustment mode cancellation : Press the ≡M key.

2. Adjustment

1) Operate adjustment about Red,Green,Blue centering magnet.
2) SGS-THOMSON Convergence assy
   Adjust until the center of blue signal is shifted up to 30mm left from that of green signal and center of red signal is shifted up to 30mm right from that of green signal with turning the centering magnet.
3) After adjustment, re-adjust convergence data and exit the adjusting mode.
   a.Adjustment mode:Press the SVC key and then press the ≡M key.
   b.Data reset : Press 0 KEY and then OK key.
   c.Adjustment mode cancellation : Press the ≡M key.

• High Voltage Regulation Adjustment

1. Test Equipment

Digital Multi-Meter(DMM)

2. Preparation for Adjustment.

Select picture mode to ‘DYNAMIC’ in no signal input.

3. Adjustment

1) Connect “+” terminal(Red) of DMM to the P416A of the Deflection PCB, [+] and the “-” terminal(Black) to the P416B,[-].
2) Adjust VR401 so that the voltage of multimeter to be below voltage.
   Model except for German model: 21.6 ± 0.1V.
   German Model: 20.5±0.1V.

• CUT-OFF Adjustment

1.Preliminary steps

1) Adjustment must be operated in a dark room(simple dark room).
2) Turn the screen volume to the left so that the screen voltage to be MIN. (Entering the horizontal mode when the screen voltage is high may occur the horizontal burning of PRT.)

2.Adjustment.

1) Press the “SVC”key and then press the ≡/ key. on the remote controller for adjustment to display horizontal line.
   (Even though it enter into the Adjustment mode,the horizontal line might not be seen according to the position of Screen Volume.)
2) Adjust Screen Volume (R/G/B) in Focus Pack until brightness of red/blue/green horizontal line is hardly seen.
   (At the moment,brightness of red,blue or green horizontal line should be equal to one another.)
3) Exit the adjustment mode by pressing the ≡/ key.

• Deflection Adjustment

1. Preliminary steps

1) NTSC mode should be adjusted after adjusting PAL mode.
2) NTSC adjustment should be done in STANDARD mode of picture after receiving 13CH signal or MULTI 48CH signal,and PAL adjustment should be done in STANDARD mode of picture after receiving EU05 CH.
3) Reset the data in convergence adjustment mode,quit the mode.
   Adjustment Mode : Press the “SVC” key and then ≡M key.
   Data reset : Press the “5” key and then OK key.
   Adjustment mode cancellation :Press the ≡M key.
4) Display only the Green raster using lens covers to block Red and Blue.

2. PAL Mode Deflection adjustment

Do not adjust VS ,HS ,VL ,A-ANG ,A-BOW ,SC ,V-ASP in PAL MODE. At SVC mode,press the YELLOW key get into the deflection adjustment mode.

1) VS (Vertical Shift)
Adjust until the geometric vertical center line is accord with the vertical center line of screen JIG in EU 05 CH by pressing the VOLUME ◄,► key.

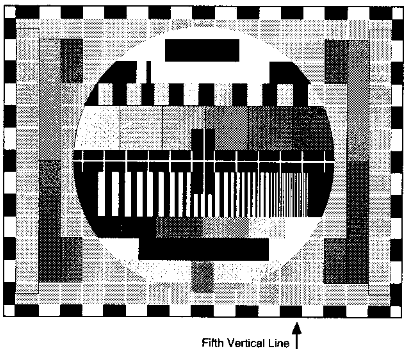
2) VA (Vertical Amplitude)
Adjust until fifth vertical line from upper and lower center of the screen is accord with the last point of the frame.

3) HS (Horizontal Shift)
Adjust until the geometric horizontal center line is accord with the horizontal center line of screen JIG.

4) EW (East-west Width)
Adjust until the outermost left and right vertical line of the screen is accord with the last point of the frame.

5) EP (East-west Parabola)
Adjust so that middle portion of the outermost left and right vertical line looks like parallel with vertical lines of the PRT.

6) ET(East-west Trapezium)
Adjust to make the width of top horizontal line same with it of the bottom horizontal line.



7) A-ANG(AFC Angle)
Vertical slope adjustment

8) A-BOW(AFC BOW)
Vertical get bending adjustment

9) U-C(Upper Corner Pincushion)
Upper part pin cushion adjustment

10) L-C(Lower Corner Pincushion)
Lower part pin cushion adjustment

11) U-VL(Upper Vertical Linearity)
Adjust vertical linearity of upper screen

12) L-VL(Lower Vertical Linearity)
Adjust vertical linearity of lower screen

13) VL (Vertical Linearity)
Adjust the top/bottom size of circle to be same in the EU 05CH.

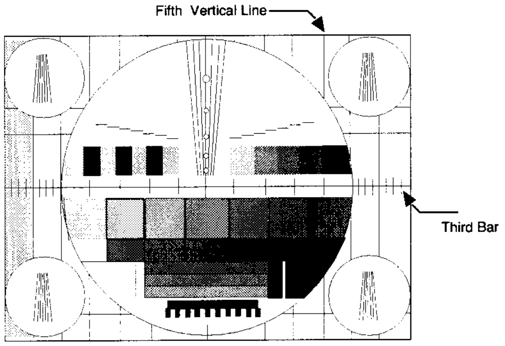
14) SC (Vertical "S" Correction)
Adjust so that all distance between each horizontal lines are to be the same.

15) V-ASP(Vertical Aspect Ratio)
Adjust the vertical aspect ratio.

16) Store the adjusted data in EEPROM by pressing the "OK" key before exiting adjustment mode.
17) Exit the Adjustment mode by pressing the 'TV/AV' key.

3. NTSC Mode Deflection Adjustment

1) Adjust vertical size (VA Adjustment) until fifth vertical bar from upper and lower center screen is accord with the edge of the frame.
2) Adjust horizontal size (EW Adjustment) until third bar to indicate horizontal size of circle is accord with the edge of the frame.
3) Do other adjustments the same as in PAL mode.



• Lens Focus & Electronic Focus Adjustment

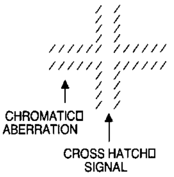
1. Preliminary steps

1) Electronic focus,Raster slope & Raster position must be pre-adjusted.
2) Heat-run over 60 minutes.
3) Receive Crosshatch pattern.
(PAL:EU07(PR 8) or NTSC:09CH(PR 13))

* Note: Loosen the butterfly nut in the lens tub slightly,being careful that it is mot loosened to the point that the lens can move out of focus.

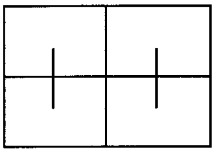
4) Adjustment must be done in a dark room(simple dark room) Be careful not to touch the lens during adjustment.
5) Make any one color raster using lens covers.
6) Rotating lens right from the front side chromatic haze occurs beside Cross-hatch line changes as follows;

Lens	Change of chromatic aberration
Red	Orange ¤AScarlet
Green	Blue ¤ARed
Blue	Purple ¤AGreen



2. G-lens Adjustment

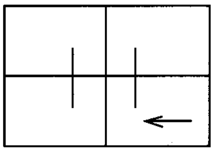
1) Rotate the lens until the chromatic haze changes from blue to red.
2) Viewing the all screen, in no case of the chromatic aberration appeared slimly within 3.5 cross-Hatch of the picture center. At this time, in case that the red chromatic aberrations bright line isn't equal, adjust Green lens so that the red chromatic aberration is appeared more than previous time.



3) Switching the signal to 13CH and operate adjustment minutely.
4) Adjust Green focus control volume of focus pack so that the external big circle's part appeared clearly.
5) Adjust accurately by repeat the upper control.
6) Especially, noting to the Green light because it influenced on picture's function.

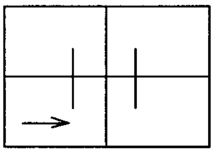
3. R-lens adjustment

1) Rotate the RED lens until the chromatic haze changes from orange to scarlet.
2) Adjust to appear Red chromatic aberration in right 3.5 cross-hatch section at center screen.Adjust the chromatic aberration so that it located center correctly.
3) Switching the signal to 13CH and adjust it as same method of Green lens.
4) Adjust as same method of Green lens with Red focus control volume of focus pack.



4. B- lens adjustment

1) Rotate the lens until the chromatic aberration of 3.5 Cross-Hatch left from center point changes from Violet to Green. Adjust the chromatic aberration to be center point between violet and green.



2) Adjust as same as method of Green lens with Red focus control volume of focus pack.

5. Focus checking

After adjustment Red,Green & Blue lens, remove lens cover and receive Cross-Hatch pattern and check the overall focus. If needed,repeat above.

• Convergence Adjustment

1. Preliminary steps

This adjustment should be performed after warming up 60 minutes.

1) Adjust after Horizontal/Vertical Raster position,Beam alignment magnet, and focus adjustments have been completed.
2) Do it always with crosshatch pattern.
3) Adjust for both PAL and NTSC system.
4) Use the JIG screen with the cross hatch pattern for Adjustment.

2. Convergence Key

1) Convergence Mode : SVC,≡M
2) Cursor shift : ◄ , ► , ▲ ,▼
3) Cursor Movement/Adjustment Selection : OK
4) Cursor Color Selection : TV/AV
5) Adjustment mode out : ≡M

*Note: When cursor flashes,set is in adjustment mode When R,G or B selected color flashes,the set is in cursor movement mode.

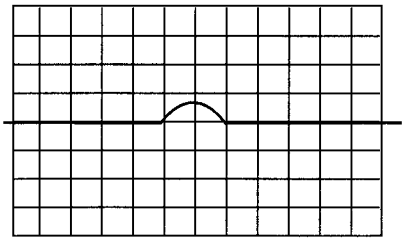
• PAL Mode Adjustment

1. Preliminary steps

1) Receive the EU 05CH signal.
2) Press the buttons SVC & ≡M of Remote Controller for adjustment to get into the convergence adjustment mode.

2. Horizontal/Vertical phase adjustment

1) Press the buttons 9 & 5 to get into the phase adjustment mode.
2) Horizontal Phase Adjustment.
   Move the convex part to the middle of TV screen.



3) Press the OK button to escape from the adjustment.

3. Pattern position adjustment

1) Change into pattern shift mode.
   (Press numeric buttons "9" & "4")
2) Make sure to overlap pattern and image.
   (Use MUTE button)
3) Accord the center of image and pattern.
   (Use ◄ , ► , ▲ ,▼ buttons)
4) Quit pattern shift mode. (Press "OK" button)
5) Save adjusted phase/pattern position adjustment mode.(Press "9", "2" & "OK" buttons)

4. Auto convergence

*Convergence is based on the auto adjustment using PC and Camera while applying the THOMSON convergence Assy and if need,adjust manually like below method.

5. Green convergence adjustment

1) Show the OSD on screen by pressing 2 button,then change the OSD to green(G) adjustment mode with pressing TV/AV button.
2) Close the cover of red PRT and blue PRT so that green display on screen only.
3) Adjust to coincide green pattern with screen JIG pattern.
   (Use ◄ , ► , ▲ ,▼ buttons)
   At this time move cursor from center to around and adjust convergence.

6. Red convergence adjustment

1) Show the OSD on screen by pressing 2 button,then change the OSD to red(R) adjustment mode with pressing TV/AV button.
2) If the need arises,close the cover of the blue lens.
3) Coincide the red screen with the green screen in same way with that of green convergence adjustment.

7. Blue convergence adjustment

1) Show the OSD on screen by pressing 2 button,then change the OSD to blue(B) adjustment mode with pressing TV/AV button.
2) Coincide the blue screen with the green screen in same way with that of red convergence adjustment.

8. Saving adjusted data

1) To save the data after adjustment,Press "9", "1" & "OK" button.
2) Quit convergence adjustment mode. (" ≡M " button)

9. NTSC mode adjustment

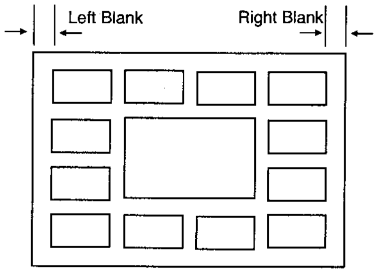
1) Receive the 13CH or Multi 48 CH signal.
2) Adjust as same method of PAL mode.

10. Auto-Convergence measuring

1) Operate the auto-convergence measuring separately in PAL,NTSC mode.
2) Operate in the condition of 'Zero magnetometer ' in room after correcting convergence manually.
3) How to measuring
   Press the 'SVC ->≡M ->MENU->3 key to operate Auto convergence measuring.

11.PIP-Position adjustment

1)Press the WD2 9/4PIP button so that the screen to be Multi-picture 12SCAN after receiving the PAL signal.
2)Check the R/L space is to 20±5mm.



3)If not,press SVC key on R/C to enter adjustment mode and then press the YELLOW key to move into 'SERVICE ADJUSTMENT 5'
4)Adjust M-HOR and M-VER so that left/right space to be symmetry.
5)Press the OK key to store the data.

• White Balance Adjustment

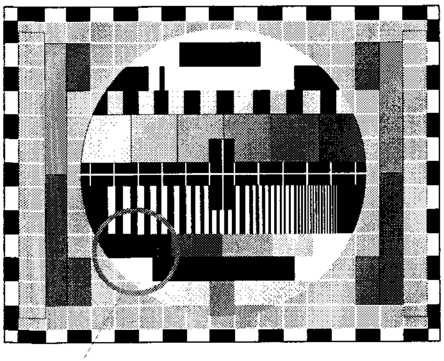
1. Test Equipment

Brightness meter(CA110)

2. Adjustment

1) This adjustment must be operated in a dark room or equivalent.
2) Adjust after Cut-Off and Focus adjustment.
3) The brightness meter must be located in 20¡ 5cm distance from the center of the screen.
4) Receive WINDOW signal.
   * High Light : 200±3 cd/m^2
   * Low Light : 10±3 cd/m^2
5) Set BRIGHT to H/Light adjustment mode in 4) and enter SVC mode by pressing the "SVC" button. Adjust RG (R Gain) and BG (B Gain) until color coordinate becomes X=0.280 and Y=0.300 (Deviation : ±0.01).
6) Set BRIGHT to L/Light adjustment mode and adjust CR (R Cut Off) and CB (B Cut Off) until color coordinate becomes X=0.282 and Y=0.286 (Deviation : ±0.01).
7) Repeat adjusting until the color coordinate of H/Light and L/Light is satisfied.
8) Save the data after adjustment. (Press "OK" button)
9) Quit adjustment mode. (" TV/AV " button)

• Sub-Bright Adjustment



1) Tune the TV set to receive a EU 05 CH.
2) Enter SVC mode by pressing the "SVC" button. Adjust S-BRI data until 100% and 80% GRAY PATTERN is classified. (Use ◄ , ► , ▲ ,▼, OK buttons)

• DVCO Adjustment

1) Tune the TV set to receive a EU 05 CH.
2) Enter the adjustment mode by pressing SVC button of Remote Controller for adjustment,then select DVCO menu. Operate auto adjustment with VOL ► button. If DVCO data is changed,auto adjustment has finished.
3) After finishing DVCO adjustment,save the data by pressing OK button.

• Auto-Convergence Check

1)Check the Auto-Convergence in PAL/NTSC mode separating.
2)Press the SVC key on R/C for adjustment and press the ☰● to check whether Auto-Convergence works normally in each mode.
3)If not,check the Convergence condition or Measuring condition and SENSOR condition.
4)The shipment must be done after restoring the final auto convergence data value.

*** Restore a Convergence data**
SVC -> ≡M -> TEXT

• Check the Option Adjustment

1) Check the OPTION1~4 data of attach 6 is well recorded.
2) The option value of each suffix is started on JOB EXP of 3141VMN chassis Assy.

Convergence Adjustment Mode

- SVC -> ≡M -> MENU

*** This Mode is for engineering. So,don't change before permission from Design Department.**

0.AC POSITION READ : Distance data(After auto convergence measuring)

1.Save to 50Hz/60Hz : Save (convergence adjustment data)
It's same 9,1,OK.

2.Save Control data : Save (A phase adjustment data)
It's same 9,2,OK.

3.AC Position Meas. : Execute(auto convergence measuring)

4.Pattern : Adjust location of convergence pattern.
It's same 9,4,OK.

5.Phase : Adjust a phase of convergence pattern.
It's same 9,5,OK.

6.GRID Border

Item	Description	(PAL)	(NTSC)
HGD	Horizontal Grid Distance	27	27
HRD	Horizontal Retrace Distance	55	55
VGD	Vertical Grid Adjustment	22	38
BPH	Border Position Horizontal	20	18
BPV	Border Position Vertical	14	26

7.ADJUST: Set the Dynamic focus data&auto-convergence data

Item	Description	(PAL/NT)
FV1	Focus parabola top value	44
FV2	Focus parabola middle value	19
FV3	Focus parabola bottom value	41
VFP	Focus parabola position	21
FSB	Start of the retrace value	40
FVR	Focus value during frame retrace	45
STA	Force the video pattern fast blanking	110
ACO	Auto convergence offset	60
OPT	EEPROM/MICOM	MICOM
INIT	Initialization	NO

8.OSD POSITION

9.AC PATTERN ADJ :Assign location for pattern start

<PAL mode>

H,V	H,V	H,V
17,16	4,7	8,17
17,15	3,7	10,15
18,17	3,6	11,14
14,17		11,16
14,17		13,17
15,16		13,17
18,9	6,18	9,5
18,8	5,20	10,7
19,6	4,18	10,9

<NTSC mode>

H,V	H,V	H,V
14,30	5,17	10,33
14,32	3,15	12,31
15,33	3,15	13,28
11,31		14,27
11,29		15,29
12,29		15,30
15,11	6,28	12,5
15,9	5,28	13,6
16,10	4,28	13,10

• SVC Adjustment mode & Initial data

1. White Blalane adjustment data (IC:CXA2100)

Menu	Description	Range	Default
RD	Red Drive		12
GD	Green Drive		1F
BD	Blue Drive		19
RC	Red Cut-off		0C
GC	Green Cut-off		3F
BC	Blue Cut-off		19
S-BRI	Sub BRIGHT		10
DVCO	Digital VCO		

2. Deflection adjustment data (IC:CXA2100)

Menu	Description	Range	Default	
			PAL	NTSC
VS	Vertical Shift		11	11
VA	Vertical Amp		0E	0B
HS	Horizontal Shift		1F	30
EW	East-West Width		23	23
EP	East-West Parabola		1A	1C
ET	East-West Trapezium		4	4
U-C	UP Corner Pincushion		10	11
L-C	LO Corner Pincushion		10	11
U-VL	UP Vertical LInealty		D	B
L-VL	LO Vertical LInealty		9	7
VL	Vertical LInealty		6	6
A-ANG	AFC Angle		7	7
A-BOW	AFC Bow		7	7
SC	Vertical S-Correction		3	3
V-ASP	Aspect ratio control		1F	1F

3. Picture adjustment data (IC:CXA2100)

Menu	Description	Range	Default
D-COL	Dynamic Color ON/OFF		1
COLAX	Color matrix		2
DCOL	Dynamic Color Temperate		1
LIMLE	RGB Amplitude Limiter Level		1
CTILE	CTI Level		1
GAMMA	GAMMA correction		2
LTILE	LTI Level		1
BLKBO	RGB Bottom LImiter Level		0
ABLTH	ABL threshold		3
ABLMO	ABL Mode		3
VM-LE	VM Level		2
PREOV	Pre/Over-Shoot Control		3
DPIC	Auto Pedestal level		1
DC-TR	DC transmission control		3
LRGB2	RGB2 output level control		A
DL-PA	DElay Line switching		0
SHPF0	Sharpness f0		1
CB-F1	INput1 CB signal DC Offset		7
CR-F1	INput1 CR signal DC Offset		4
CB-F2	INput2 CB signal DC Offset		7
CR-F2	INput2 CR signal DC Offset		4
VCOMP	A-SAW output gain control		0
EW-DC	EW output DC level		1
AKBT2	AKB time shift		0
HCOMP	EW output DC control		0
VBLKW	VBLK width control		0
LE-BL	Left HBLK width control		37
RI-BL	Right HBLK width control		1B
S-CON	Sub contrast		A
P-ABL	PEAK ABL		C

4. Sound adjustment data (IC:MSP3411)

Menu	Description	Range	Default
FM	FM Prescaler		1B
NP	NICAM Prescaler		73
SP	SCART Prescaler		18
S1 VOL	SCART 1 Volume		50
S2 VOL	SCART 2 Volume		50
MDB-ST	MDB Effect Bass Strength		24
MDB-LIM	MDB Amplitude Limit		FD
MDB-HMC	MDB Harmonic Content		64
MDB-LP	MDB Low Pass		09
MDB-HP	MDB High Pass		06

5. Picture adjustment data (IC:SDA9410)

Menu	Description	Range	Default
VDELM	Vsync input delay		13
NRY	Temporal Noise Reduction of Y		0E
NRC	Temporal Noise Reduction of C		0A
NRKY			00
NRKC			00
ODELM	Output Processing delay master		AA
VDELS	Vsync input delay(sub)		13
FSEL	Filter Select		3
RF AGC	RF AGC Level		A2
M-HOR	Horizontal PIP Position		7
M-VER	Vertical PIP Position		7

6.OPTION Data Adjustment

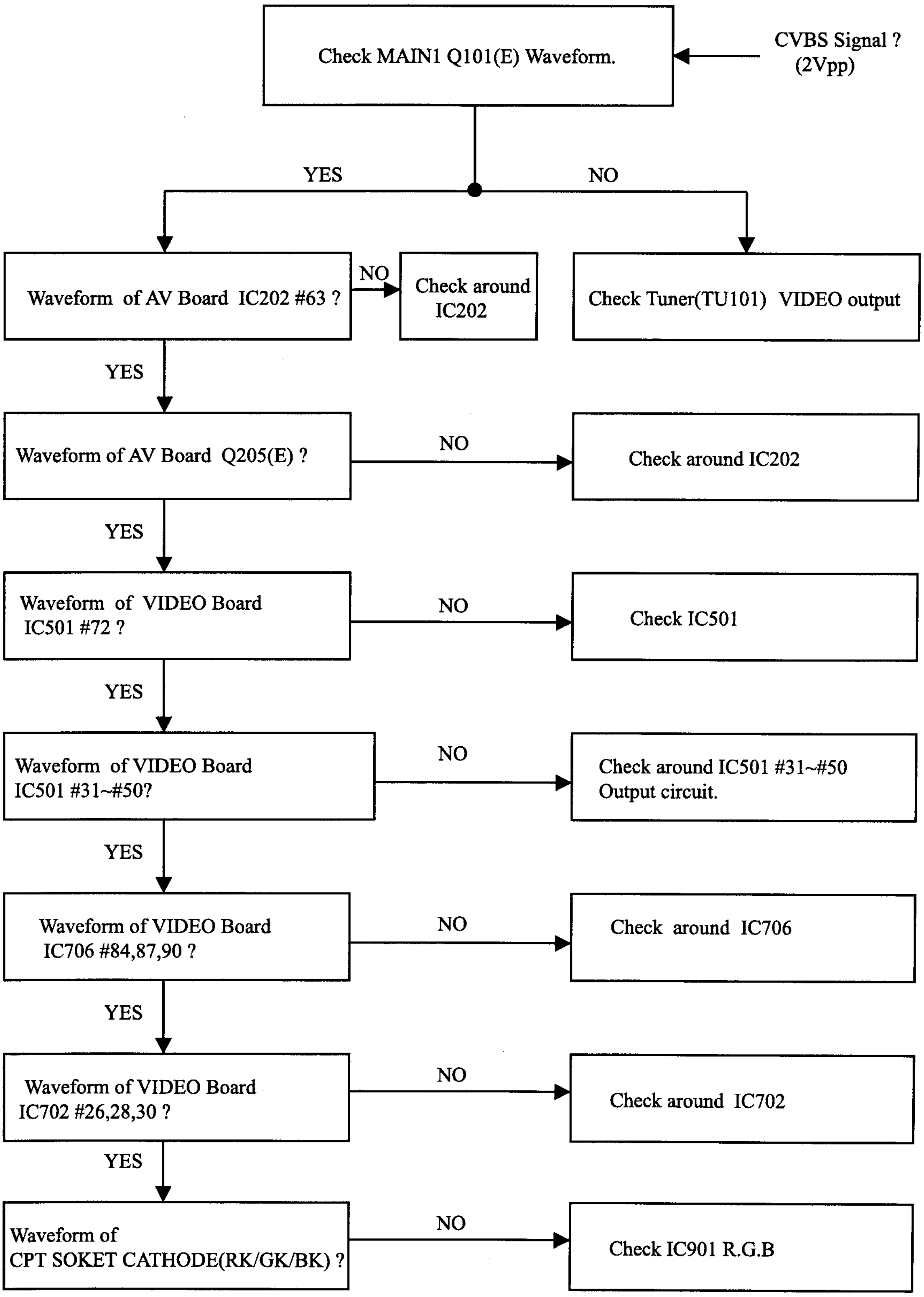
	Range	Description	Default
option1	200 PRO	1: 200 Program(CHINA Only)	
		0: 100 Program	
	TSEAR	1: With TURBO Search	
		0: Without TURBO Search	
	I/II SV	1: Save Dual Sound Condition	
		0: Not Save Dual Sound	
	TOP	1: TOP + FLOF TEXT	
		0: FLOF TEXT	
	EYE	1: With Digital EYE	
		0: Without Digital EYE	
	A2 ST	1: With FM Stereo	
		0 : Without FM Stereo	
	SYS	0 : BG/I/DK(PE-)	
		1 : BG/L(PL-)	
		2: BG/I/DK/M(PT-)	
		3 : RESERVED	
option2	ACMS	1: With Channel Name Display	
		(All Countries except Australia)	
		0: Without Channel Name Display	
		(Australia)	
	VOL	1: Rushed Sound Curve	
		(Middle East ASIA,ASIA)	
		0: Standard Sound Curve	
		(Other countries)	
	AV4	1: With AV4 Input	
		0: Without AV4 Input	
	EU	1: PE/PL Model	
		0: PT Model	
	DVD i	1: With COMPONENT1 Input	
		0: Without COMPONENT1 Input	
	DVD p	1: With COMPONENT2 Input	
		0: Without COMPONENT2 Input	
	VGA	1: With VGA Input	
		0: Without VGA Input	
option3	C SPK	1: With CENTER SPK	
		0: Without CENTER SPK	
	VFD	1: Digital Index button	
		0: SOUND MUTE button	
	C MUTE	1: RF Normal Sound Modulation(Others)	
		0: High Deviation Modulation(CHINA)	
	DOLBY	1: With DOLBY Pro LOgic	
		0: Without DOLBY Pro LOgic	
	V-DOL	1: With DOLBY Virtual Surround	
		0: Without DOLBY Virtual Surround	

	Range	Description	Default
option3	TEXT	1: With Teletext	
		0: Without Teletext(CHINA)	
	SCART	1: RF 54% Modulation INput	
		0: RF 100% Modulation INput	
	CH + AU	1: China+AUST.Channel Table	
		0: Other countries Channel table	

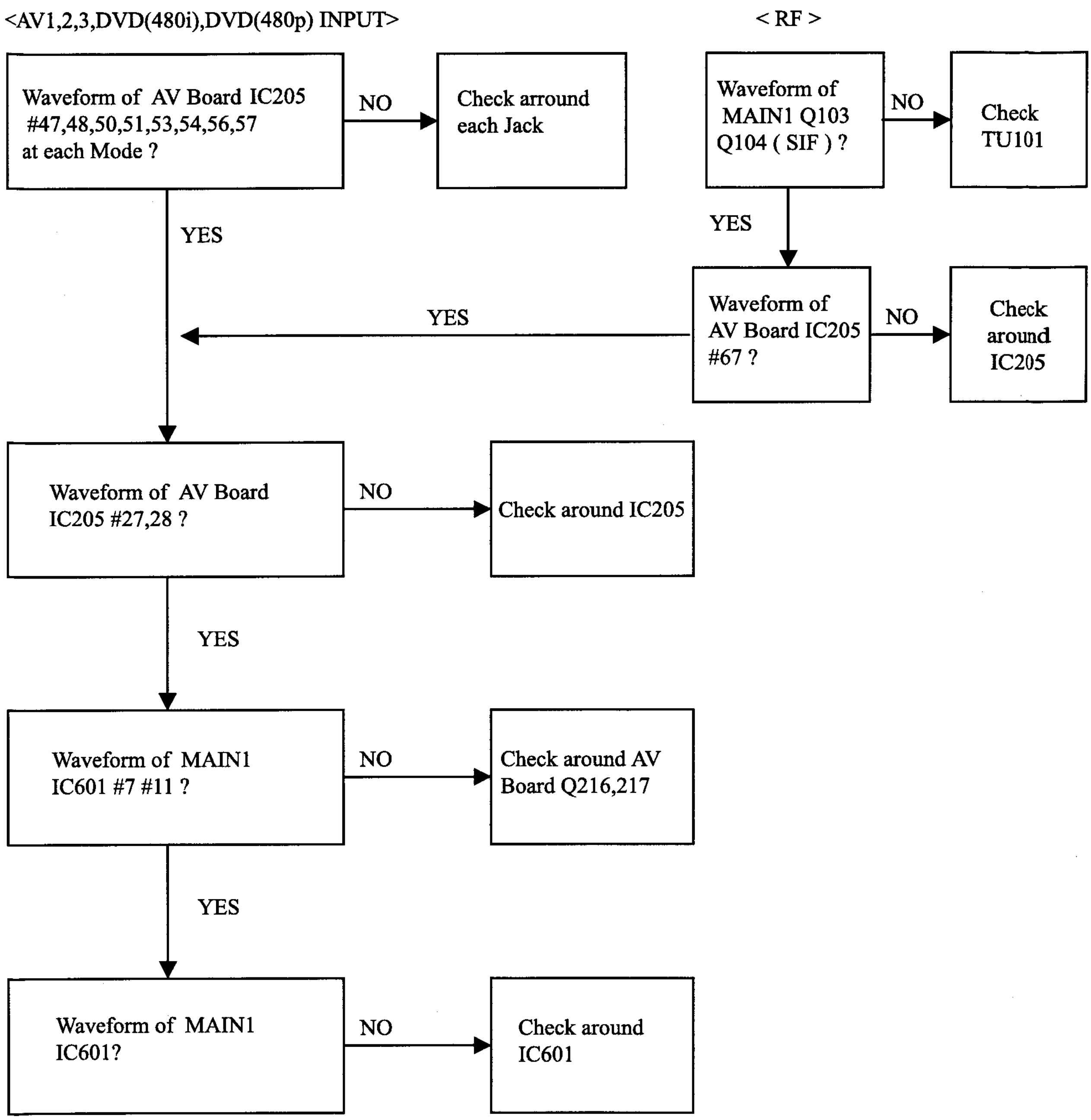
	State	Language	Function	Default
option4	LANG	0:ENG Only	English	
		1:EU 5EA	English/German/French/Italy/Spanish	
		2:EU ETC	Pol./Hungary/Czecho/Russia/Eng	
		3:PARSI	English/Parsi	
		4:ARAB URDU	English/French/Arab+Urdu	
		5:English+Hindi	English/Hindi	
		6:English+I+M+V	English/Indonesian/Malaysian/Vietnamese	
		7:English+THAI	English/Thai	
		8:English+China	English/China	
	T-LAN	0:West Europe	English/French/Swedish/Czech/German/Spanish/Italian	
		1:East Europe	Polish/French/Swedish/Czech/German/Slovenian/Italian/Rumanian	
		2:Turkey EU	English/French/Swedish/Turkish/German/Spanish/Italian	
		3:EAST EU2	English/Hungarian/Serbian/Czech/German/Polish/Spanish/Italian/	
			Rumanian	
		4:Cyrillic 1		
		5:Cyrillic 2		
		6:Cyrillic 3	Russia	
		7:Turkey/Greek 1		
		8:Turkey/Greek 2		
		9:Turkey/Greek 3		
		10:Arab/France		
		11:Arab/English		
		12:Arab/Hebrew 1		
		13:Arab/Hebrew 2		
		14:Farsi/English		
		15:Farsi/France		
		16:Farsi all		

TROUBLE SHOOTING

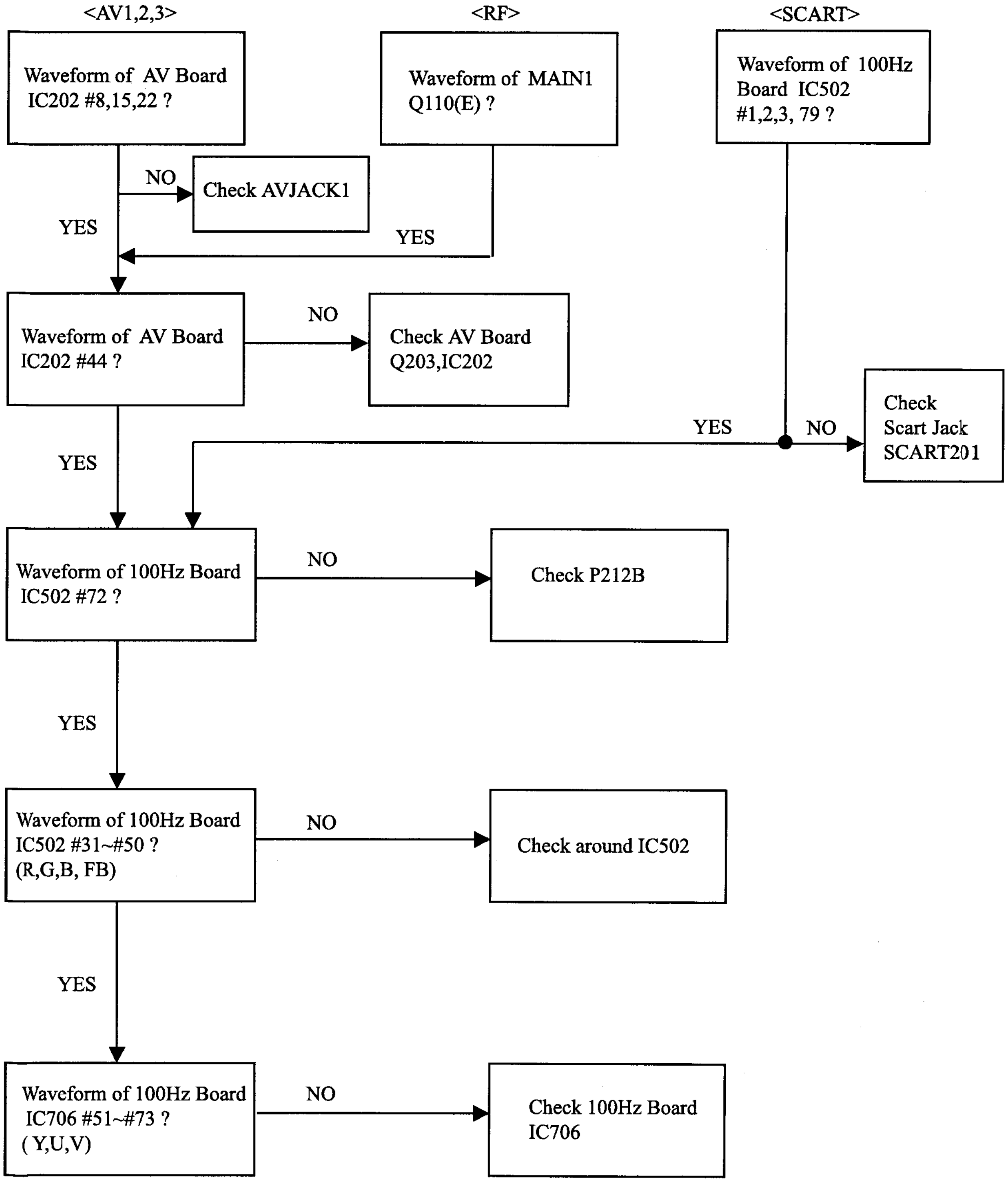
1. NO PICTURE (SOUND OK)


Check MAIN1 Q101(E) Waveform.
CVBS Signal ? (2Vpp)
YES
NO
Waveform of AV Board IC202 #63 ?
NO
Check around IC202
Check Tuner(TU101) VIDEO output
YES
Waveform of AV Board Q205(E) ?
NO
Check around IC202
YES
Waveform of VIDEO Board IC501 #72 ?
NO
Check IC501
YES
Waveform of VIDEO Board IC501 #31~#50?
NO
Check around IC501 #31~#50 Output circuit.
YES
Waveform of VIDEO Board IC706 #84,87,90 ?
NO
Check around IC706
YES
Waveform of VIDEO Board IC702 #26,28,30 ?
NO
Check around IC702
YES
Waveform of CPT SOKET CATHODE(RK/GK/BK) ?
NO
Check IC901 R.G.B

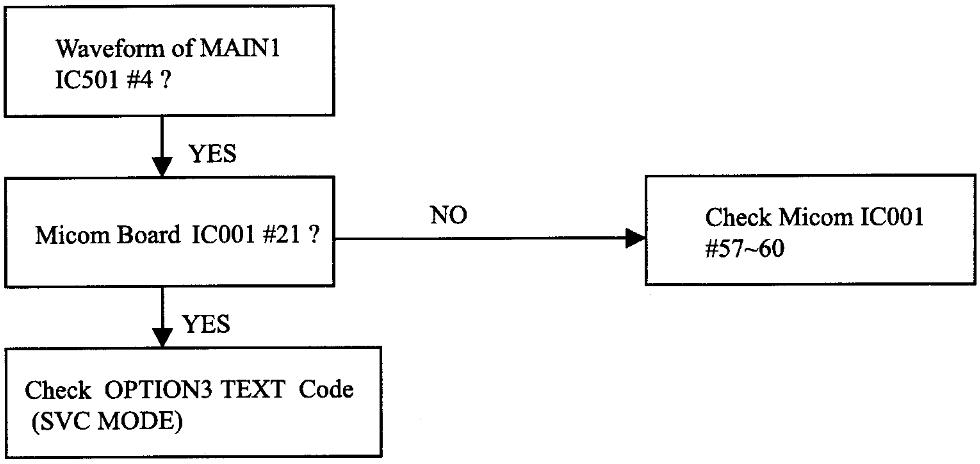
2. NO SOUND (PICTURE OK)


<AV1,2,3,DVD(480i),DVD(480p) INPUT>
< RF >
Waveform of AV Board IC205 #47,48,50,51,53,54,56,57 at each Mode ?
NO
Check arround each Jack
YES
Waveform of MAIN1 Q103 Q104 (SIF) ?
NO
Check TU101
YES
Waveform of AV Board IC205 #67 ?
YES
NO
Check around IC205
Waveform of AV Board IC205 #27,28 ?
NO
Check around IC205
YES
Waveform of MAIN1 IC601 #7 #11 ?
NO
Check around AV Board Q216,217
YES
Waveform of MAIN1 IC601?
NO
Check around IC601

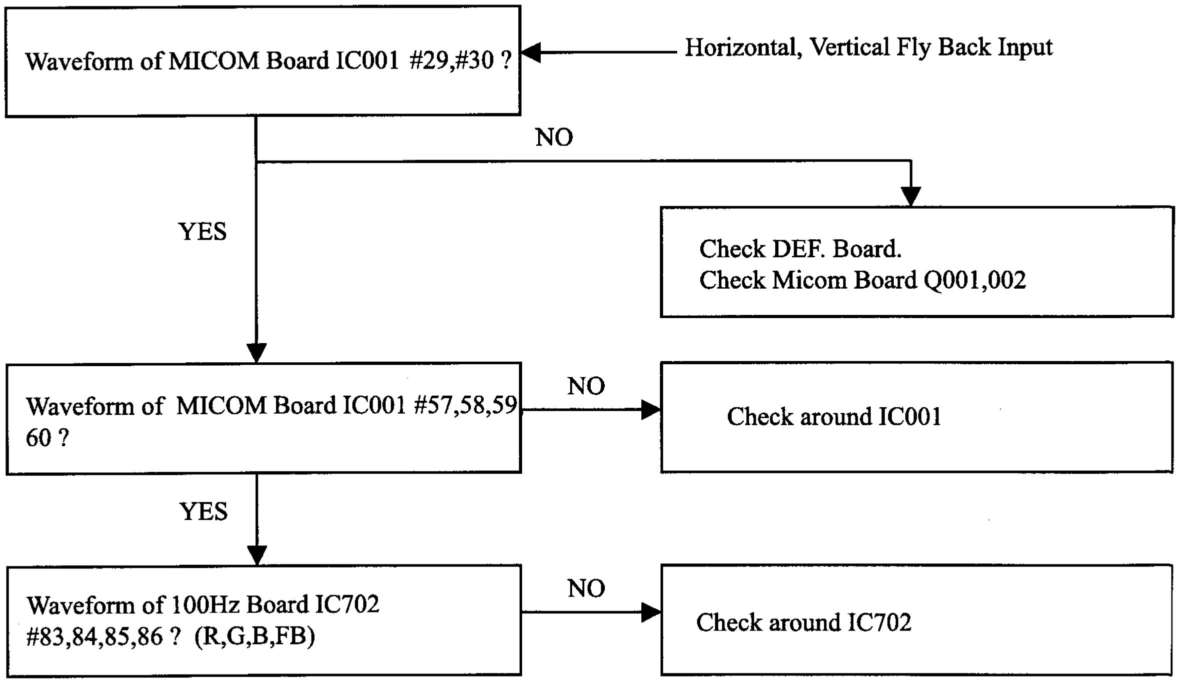
3. NO PIP


<AV1,2,3>
<RF>
<SCART>
Waveform of AV Board IC202 #8,15,22 ?
Waveform of MAIN1 Q110(E) ?
Waveform of 100Hz Board IC502 #1,2,3, 79 ?
NO
Check AVJACK1
YES
YES
Waveform of AV Board IC202 #44 ?
NO
Check AV Board Q203,IC202
YES
NO
Check Scart Jack SCART201
YES
Waveform of 100Hz Board IC502 #72 ?
NO
Check P212B
YES
Waveform of 100Hz Board IC502 #31~#50 ? (R,G,B, FB)
NO
Check around IC502
YES
Waveform of 100Hz Board IC706 #51~#73 ? (Y,U,V)
NO
Check 100Hz Board IC706

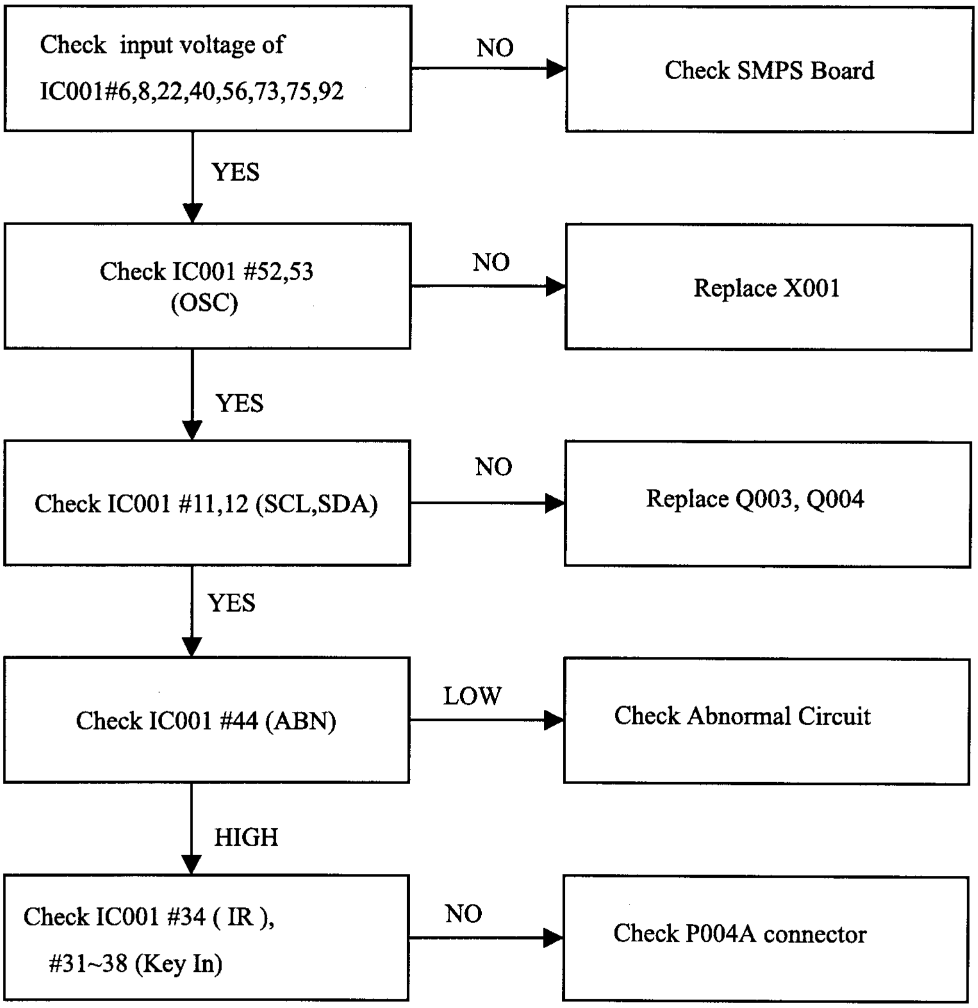
4. NO Teletext (Picture OK)


Waveform of MAIN1
IC501 #4 ?
YES
Micom Board IC001 #21 ?
NO
Check Micom IC001
#57~60
YES
Check OPTION3 TEXT Code
(SVC MODE)

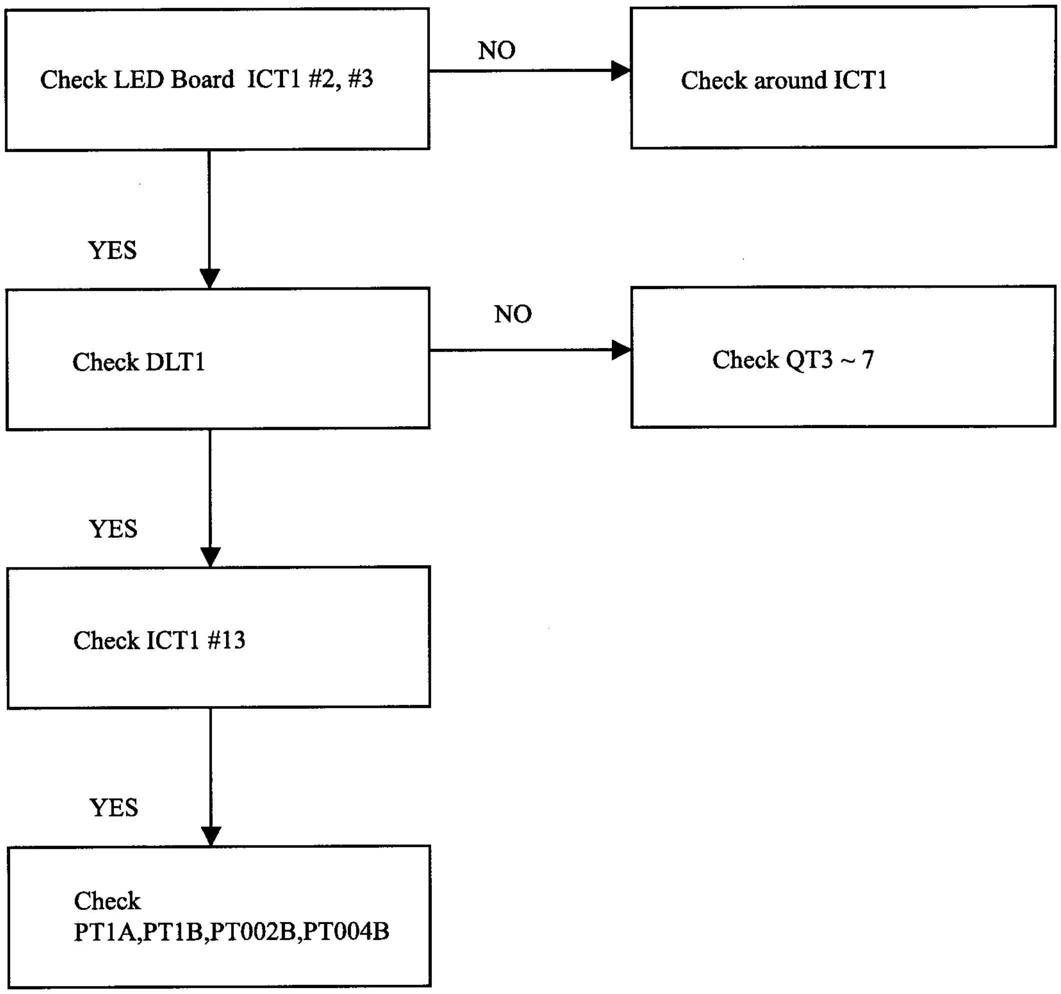
5. NO OSD (ON SCREEN DISPLAY)


Waveform of MICOM Board IC001 #29,#30 ?
Horizontal, Vertical Fly Back Input
NO
YES
Check DEF. Board.
Check Micom Board Q001,002
Waveform of MICOM Board IC001 #57,58,59
60 ?
NO
Check around IC001
YES
Waveform of 100Hz Board IC702
#83,84,85,86 ? (R,G,B,FB)
NO
Check around IC702

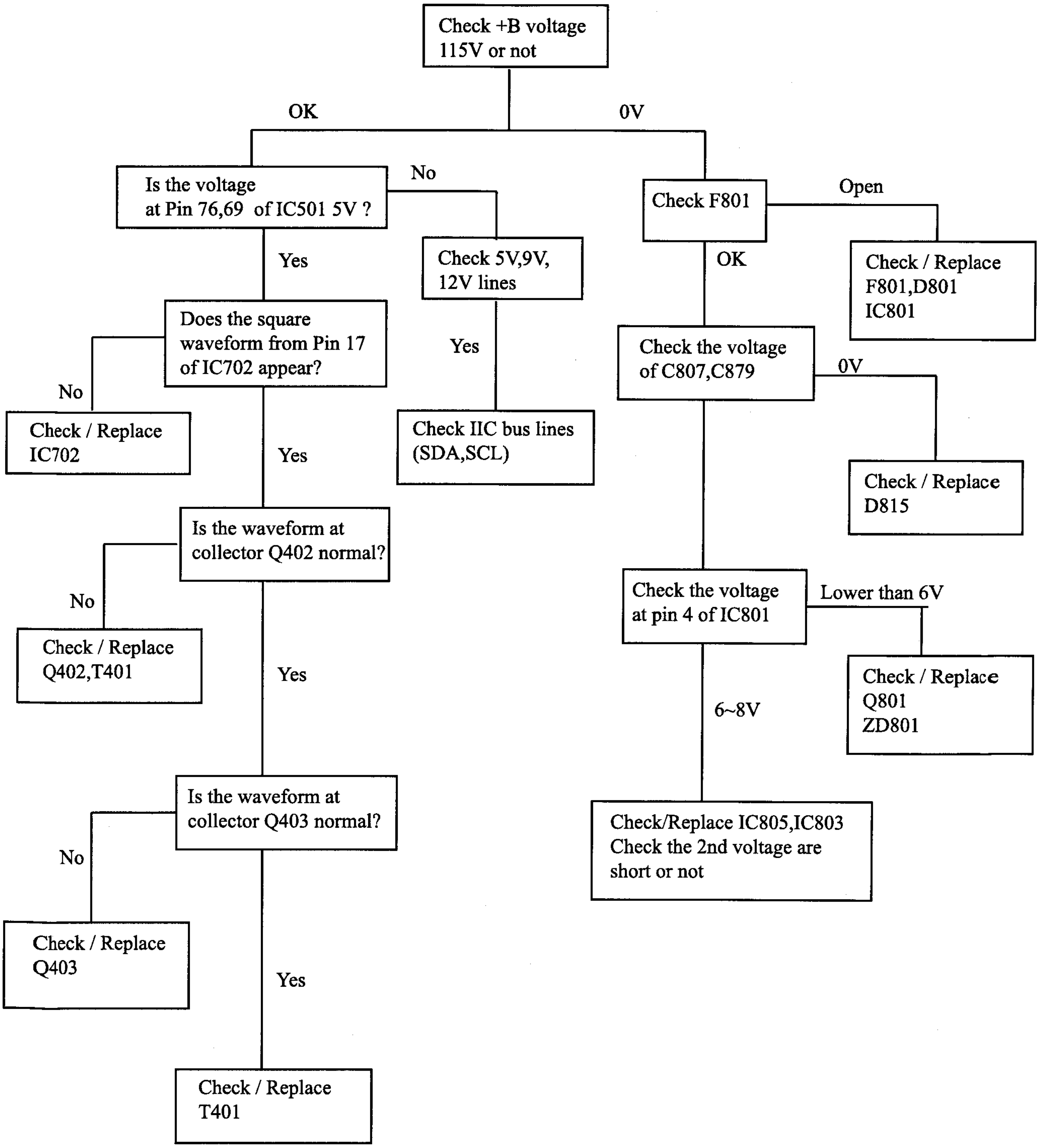
6. NO POWER ON


Check input voltage of
IC001#6,8,22,40,56,73,75,92
NO
Check SMPS Board
YES
Check IC001 #52,53
(OSC)
NO
Replace X001
YES
Check IC001 #11,12 (SCL,SDA)
NO
Replace Q003, Q004
YES
Check IC001 #44 (ABN)
LOW
Check Abnormal Circuit
HIGH
Check IC001 #34 (IR),
#31~38 (Key In)
NO
Check P004A connector

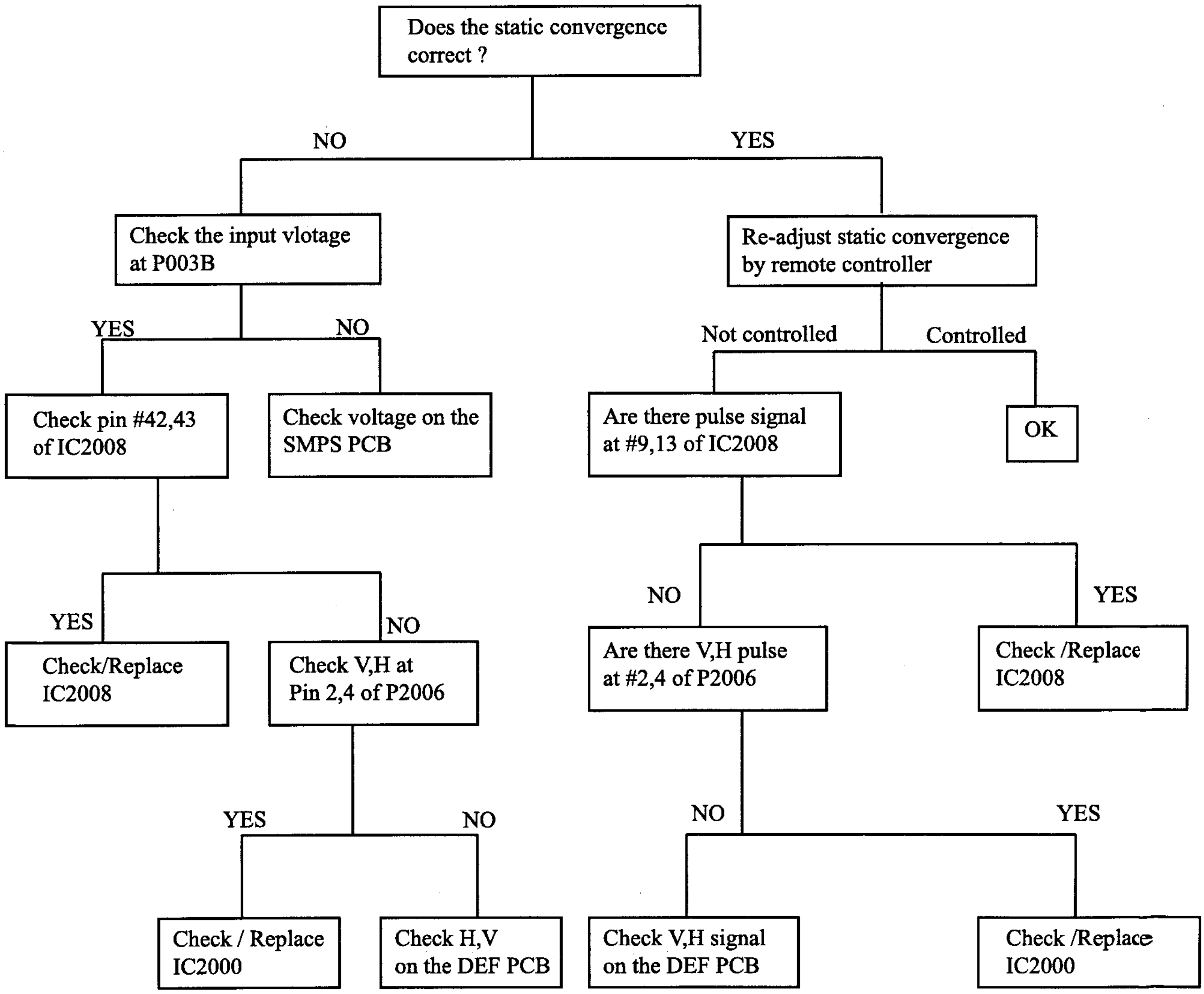
7. NO LED OPERATION


Check LED Board ICT1 #2, #3
NO
Check around ICT1
YES
Check DLT1
NO
Check QT3 ~ 7
YES
Check ICT1 #13
YES
Check
PT1A,PT1B,PT002B,PT004B

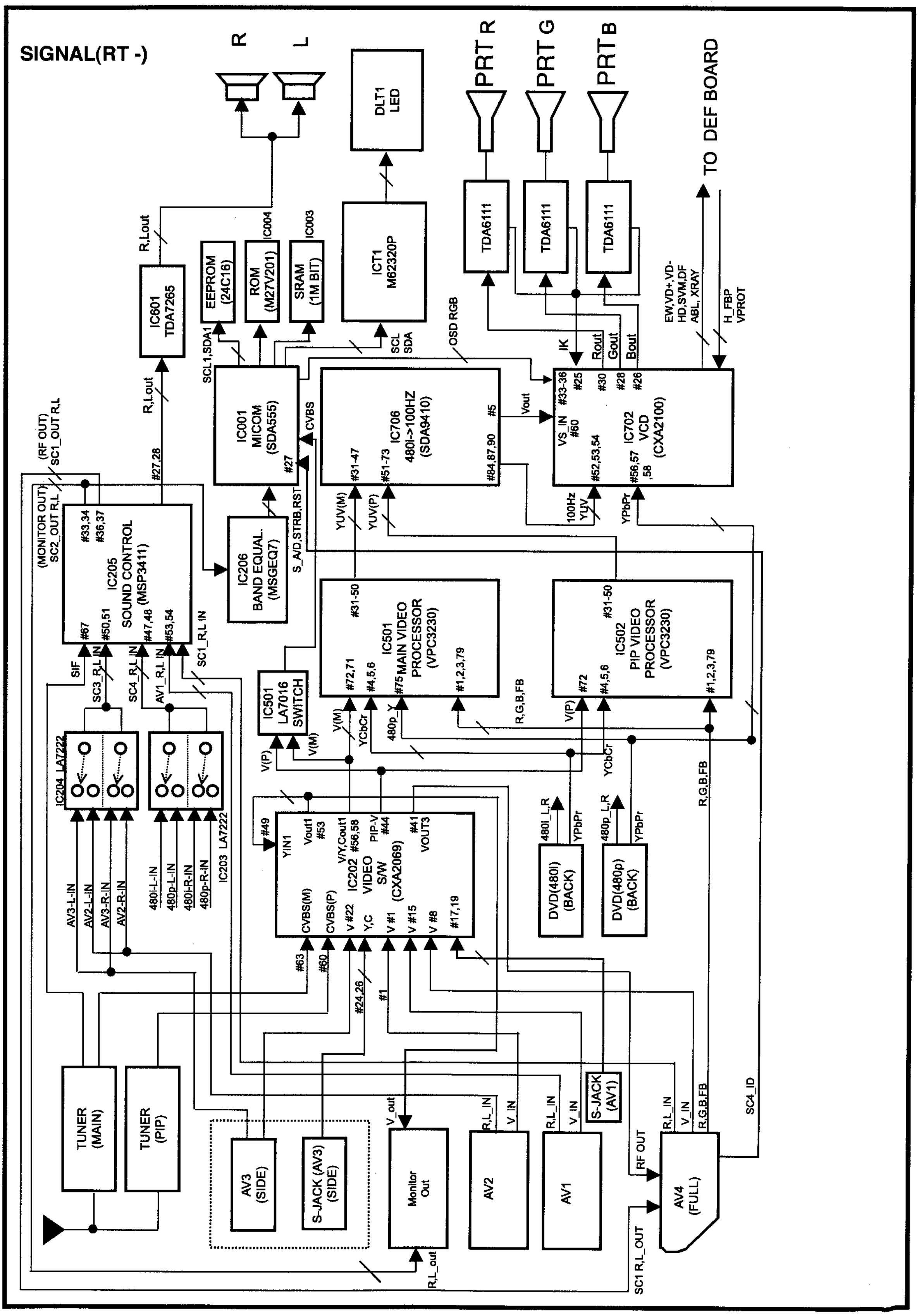
8.NO RASTER


Check +B voltage 115V or not
OK
0V
Is the voltage at Pin 76,69 of IC501 5V ?
No
Check 5V,9V, 12V lines
Yes
Check IIC bus lines (SDA,SCL)
Yes
Does the square waveform from Pin 17 of IC702 appear?
No
Check / Replace IC702
Yes
Is the waveform at collector Q402 normal?
No
Check / Replace Q402,T401
Yes
Is the waveform at collector Q403 normal?
No
Check / Replace Q403
Yes
Check / Replace T401
Check F801
Open
Check / Replace F801,D801 IC801
OK
Check the voltage of C807,C879
0V
Check / Replace D815
Check the voltage at pin 4 of IC801
Lower than 6V
Check / Replace Q801 ZD801
6~8V
Check/Replace IC805,IC803 Check the 2nd voltage are short or not

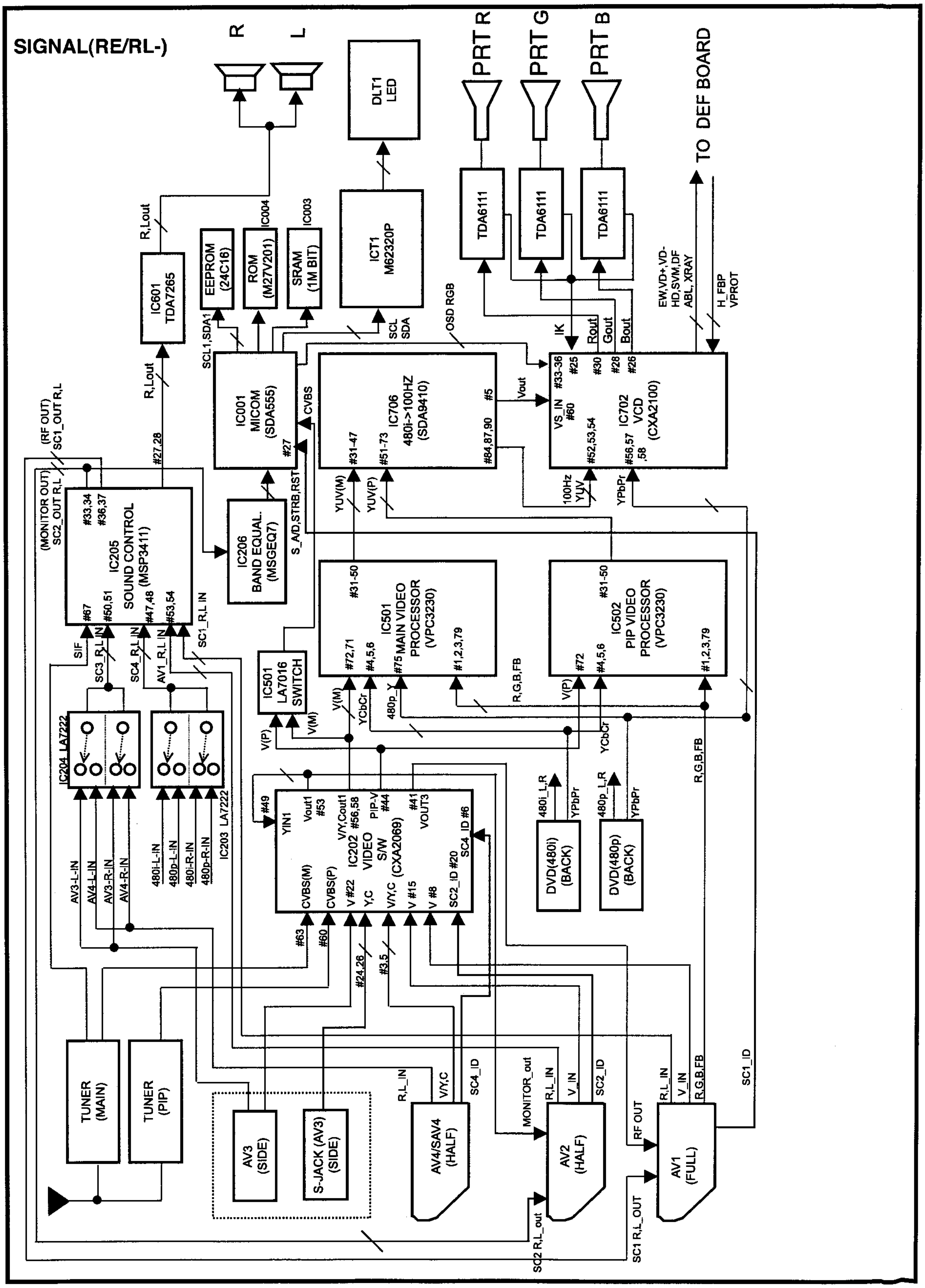
9. INCORRECT CONVERGENCE


Does the static convergence correct ?
NO
YES
Check the input vlotage at P003B
Re-adjust static convergence by remote controller
YES
NO
Not controlled
Controlled
Check pin #42,43 of IC2008
Check voltage on the SMPS PCB
Are there pulse signal at #9,13 of IC2008
OK
YES
NO
NO
YES
Check/Replace IC2008
Check V,H at Pin 2,4 of P2006
Are there V,H pulse at #2,4 of P2006
Check /Replace IC2008
YES
NO
NO
YES
Check / Replace IC2000
Check H,V on the DEF PCB
Check V,H signal on the DEF PCB
Check /Replace IC2000

BLOCK DIAGRAM

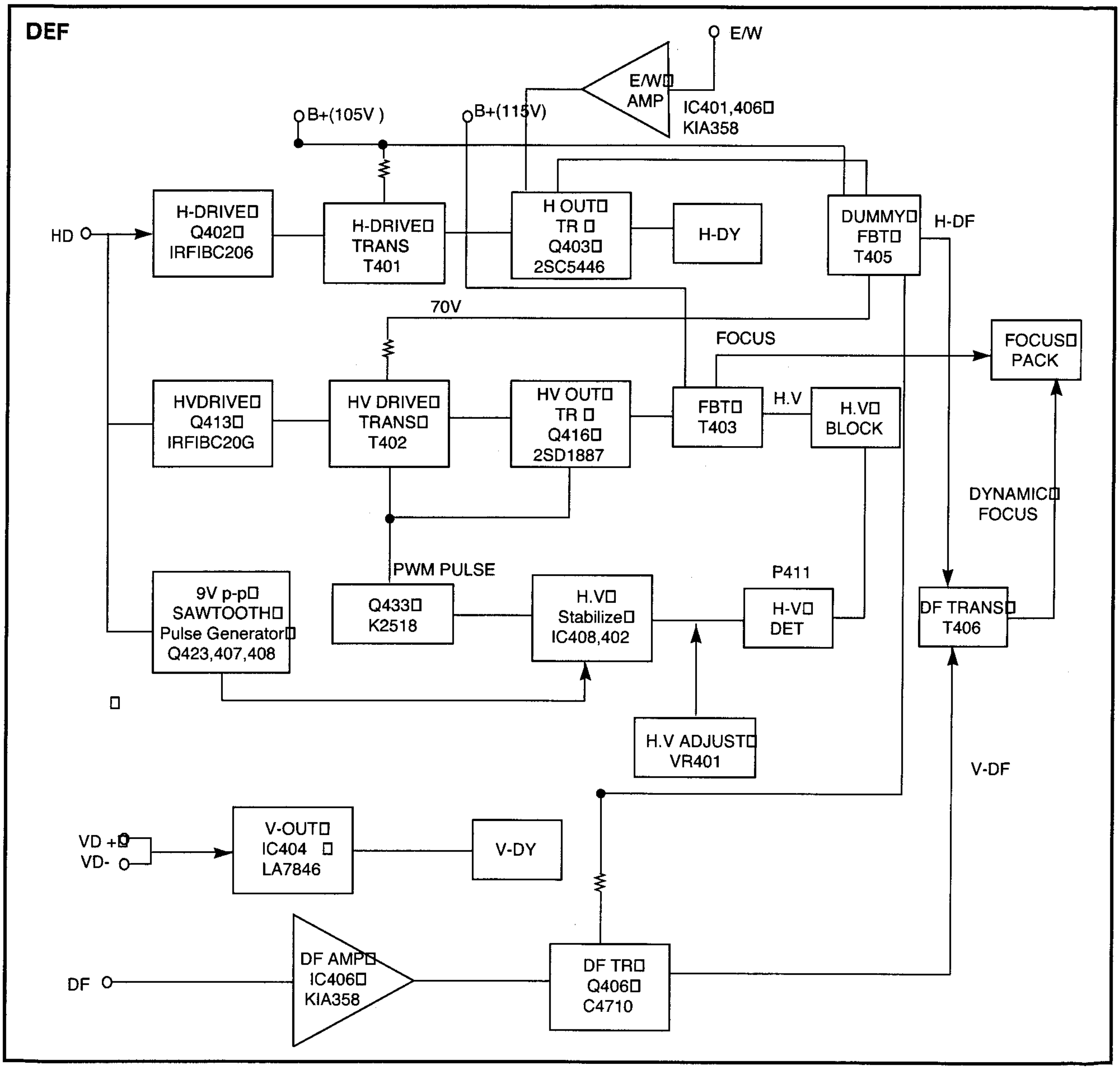

SIGNAL(RT -)
R
L
DLT1 LED
PRT R
PRT G
PRT B
TO DEF BOARD
TDA6111
TDA6111
TDA6111
IC601 TDA7265
R,Lout
EEPROM (24C16)
ROM (M27V201) IC004
SRAM (1M BIT) IC003
ICT1 M62320P
SCL SDA
SCL1,SDA1
OSD RGB
EW,VD+,VD-
HD,SVM,DF
ABL, XRAY
H_FBP
VPROT
IK
Rout
Gout
Bout
IC001 MICOM (SDA555)
CVBS
#27
IC706 480i->100HZ (SDA9410)
#31-47
#51-73
#84,87,90
#5
Vout
IC702 VCD (CXA2100)
VS_IN #60
#33-36
#25
#30
#28
#26
#52,53,54
#56,57 ,58
100Hz YUV
YPbPr
(RF OUT) SC1_OUT R,L
(MONITOR OUT) SC2_OUT R,L
#27,28
IC205 SOUND CONTROL (MSP3411)
#33,34
#36,37
#67
#50,51
#47,48
#53,54
IC206 BAND EQUAL. (MSGEQ7)
S_A/D,STRB,RST
YUV(M)
YUV(P)
IC501 MAIN VIDEO PROCESSOR (VPC3230)
#31-50
#72,71
#4,5,6
#75
#1,2,3,79
IC502 PIP VIDEO PROCESSOR (VPC3230)
#31-50
#72
#4,5,6
#1,2,3,79
R,G,B,FB
SIF
SC3_R,L IN
SC4_R,L IN
AV1_R,L IN
SC1_R,L IN
IC204 LA7222
IC203 LA7222
IC501 LA7016 SWITCH
V(P)
V(M)
YCbCr
480p_Y
AV3-L-IN
AV2-L-IN
AV3-R-IN
AV2-R-IN
480i-L-IN
480p-L-IN
480i-R-IN
480p-R-IN
IC202 VIDEO S/W (CXA2069)
#49 YIN1
Vout1 #53
V/YCout1 #56,58
PIP-V #44
#41 VOUT3
CVBS(M)
CVBS(P)
V #22
Y,C
V #1
V #15
V #8
#17,19
#63
#60
#24,26
#1
480i_L,R
YPbPr
DVD(480i) (BACK)
480p_L,R
YPbPr
DVD(480p) (BACK)
TUNER (MAIN)
TUNER (PIP)
AV3 (SIDE)
S-JACK (AV3) (SIDE)
V_out
Monitor Out
R,L_out
R,L_IN
V_IN
AV2
R,L_IN
V_IN
AV1
S-JACK (AV1)
RF OUT
R,L_IN
V_IN
R,G,B,FB
SC4_ID
AV4 (FULL)
SC1 R,L_OUT

BLOCK DIAGRAM



SIGNAL(RE/RL-)
R
L
DLT1 LED
PRT R
PRT G
PRT B
TO DEF BOARD
TDA6111
TDA6111
TDA6111
ICT1 M62320P
IC601 TDA7265
R,Lout
EEPROM (24C16)
ROM (M27V201) IC004
SRAM (1M BIT) IC003
SCL1,SDA1
SCL SDA
OSD RGB
IK
Rout
Gout
Bout
EW,VD+,VD-
HD,SVM,DF
ABL, XRAY
H_FBP
VPROT
IC001 MICOM (SDA555)
CVBS
#27
IC706 480i->100HZ (SDA9410)
#31-47
#51-73
#84,87,90
#5
Vout
IC702 VCD (CXA2100)
VS_IN #60
#33-36
#25
#30
#28
#26
#52,53,54
#56,57,58
100Hz YUV
YPbPr
(RF OUT) SC1_OUT R,L
(MONITOR OUT) SC2_OUT R,L
IC205 SOUND CONTROL (MSP3411)
#33,34
#36,37
#27,28
#67
#50,51
#47,48
#53,54
IC206 BAND EQUAL. (MSGEQ7)
S_A/D,STRB,RST
YUV(M)
YUV(P)
IC501 MAIN VIDEO PROCESSOR (VPC3230)
#31-50
#72,71
#4,5,6
#75
#1,2,3,79
IC502 PIP VIDEO PROCESSOR (VPC3230)
#31-50
#72
#4,5,6
#1,2,3,79
R,G,B,FB
IC501 LA7016 SWITCH
V(P)
V(M)
YCbCr
480p_Y
SIF
SC3_R,L IN
SC4_R,L IN
AV1_R,L IN
SC1_R,L IN
IC204 LA7222
IC203 LA7222
AV3-L-IN
AV4-L-IN
AV3-R-IN
AV4-R-IN
480i-L-IN
480p-L-IN
480i-R-IN
480p-R-IN
IC202 VIDEO S/W (CXA2069)
#49 YIN1
Vout1 #53
V/Y,Cout1 #56,58
PIP-V #44
#41 VOUT3
SC4_ID #6
CVBS(M)
CVBS(P)
V #22
Y,C
V/Y,C
V #15
V #8
SC2_ID #20
#63
#60
#24,26
#3,5
480i_L,R
YPbPr
480p_L,R
YPbPr
DVD(480i) (BACK)
DVD(480p) (BACK)
R,G,B,FB
TUNER (MAIN)
TUNER (PIP)
AV3 (SIDE)
S-JACK (AV3) (SIDE)
R,L_IN
V/Y,C
SC4_ID
AV4/SAV4 (HALF)
MONITOR_out
R,L_IN
V_IN
SC2_ID
AV2 (HALF)
SC2 R,L_out
RF OUT
R,L_IN
V_IN
R,G,B,FB
SC1_ID
AV1 (FULL)
SC1 R,L_OUT

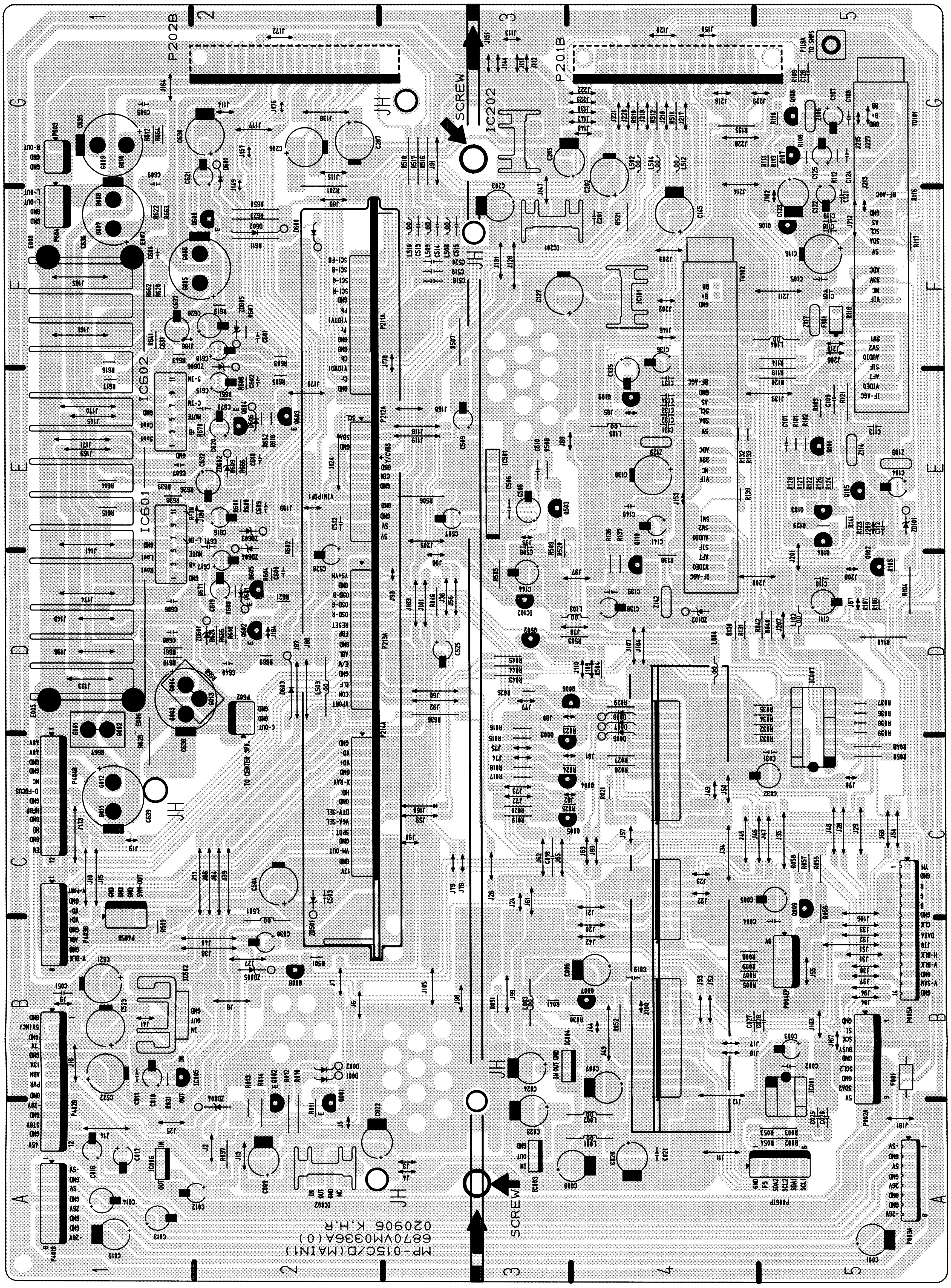
BLOCK DIAGRAM


DEF
E/W
E/W AMP
IC401,406
KIA358
B+(105V)
B+(115V)
HD
H-DRIVE Q402 IRFIBC206
H-DRIVE TRANS T401
H OUT TR Q403 2SC5446
H-DY
DUMMY FBT T405
H-DF
70V
FOCUS
FOCUS PACK
HVDRIVE Q413 IRFIBC20G
HV DRIVE TRANS T402
HV OUT TR Q416 2SD1887
FBT T403
H.V
H.V BLOCK
DYNAMIC FOCUS
PWM PULSE
P411
9V p-p SAWTOOTH Pulse Generator Q423,407,408
Q433 K2518
H.V Stabilize IC408,402
H-V DET
DF TRANS T406
H.V ADJUST VR401
V-DF
VD +
VD-
V-OUT IC404 LA7846
V-DY
DF
DF AMP IC406 KIA358
DF TR Q406 C4710

MEMO

PRINTED CIRCUIT BOARD

MAIN1


P202B
P201B
SCREW
IC202
JH
IC602
IC601
TU101
TU102
P213A
P214A
P212A
P211A
SCREW
MP-015C/D(MAIN1)
6870VM0336A(0)
020906 K.H.R
TO CENTER SPK.
1
2
3
4
5
A
B
C
D
E
F
G

COMPONENT LOCATION GUIDE(MAIN1)

C001.......A5
C002.......B5
C003.......B5
C004.......B5
C005......C5
C006.......B4
C007.......B4
C008.......A4
C009.......A2
C010.......B1
C011.......B1
C012.......A2
C013.......A1
C014.......A1
C015.......A1
C016.......A1
C017.......A1
C018......C3
C019.......B4
C020.......A4
C021.......A4
C022.......A3
C023.......A3
C024.......B3
C025.......A5
C026.......A5
C027.......B4
C028.......B5
C030.......B2
C031......C5
C032......C5
C051.......B1
C101.......E5
C104.......E5
C105.......F5
C107......G5
C108......G5
C109.......E5
C110......D5
C111......D5
C112.......E5
C113.......E5
C115.......F5
C116.......F5
C118.......F5
C119.......F5
C121.......F5
C122.......F5
C123.......F5
C124......G5
C125......G5
C126......G5
C127.......F4
C130.......E4
C131.......E4
C132.......E4
C133.......E4
C134.......E4
C135.......E4
C136.......F4
C137.......E4
C138......D4
C139......D4
C140.......E4
C141.......E4
C144......D3
C145.......F4
C201.......F4
C202......G4
C203.......F3
C205......G4
C206......G2
C207......G2
C503......C2
C504......C2
C505.......E3
C506.......E3
C507.......E3
C508.......E3
C509.......E3
C510.......E3
C512.......E2
C513.......F3
C514.......F3
C515.......F3
C518.......F3
C519.......F3
C520.......F3
C521.......B1
C522.......B1
C523.......B1
C525......D3
C528......D2
C600......D2
C601.......F2
C602.......E2
C603.......E2
C604.......F1
C605......G1
C606......D2
C607.......E1
C608......D2
C609......G1
C610.......E2
C615.......E2
C616.......E2
C617......D2
C618.......F2
C619......D2
C620.......E2
C621......G2
C628.......F2
C630......G2
C631.......F1
C632.......E2
C635......G1
C636.......F1
C637.......F2
C638......D2
C639......C1
C640......D2
C670.......E2
C671.......E2
D001.......B2
D002.......B2
D006......C4
D007......D4
D008......D4
D600.......F2
D601......G2
D602.......F2
D603......D2
D605......D2
D606.......E2
E005.......D1
E006.......D1
E007.......F1
E008.......F1
F001.......B5
F101.......F5
G001......D1
G002......D1
G003......D2
G004......D2
G005.......F2
G006.......F2
G007.......F1
G008.......F1
G009......G1
G010......G1
G011......C1
G012......C1
G013......D2
IC001......B5
IC002......A2
IC003......A3
IC004......B4
IC005......B2
IC006......A1
IC007.....C5
IC101......F4
IC102.....D3
IC201......F3
IC202.....G3
IC501......E3
IC502......B2
J2...........A2
J3...........A3
J4...........A3
J5...........A2
J6...........B2
J7...........B2
J8...........B2
J9...........B1
J10.........C1
J11.........A4
J12.........B4
J13.........A2
J14.........A1
J15.........C1
J16.........B1
J17.........B4
J18.........B4
J19.........C1
J20.........B4
J21.........C4
J22.........C4
J23.........C4
J24.........C3
J25.........A2
J26.........C3
J27.........B2
J28.........C5
J29.........C5
J30.........B5
J31.........B5
J32.........B5
J33.........B5
J34.........C4
J35.........C5
J36.........D3
J37.........B5
J38.........B2
J39.........C2
J40.........B2
J41.........B1
J42.........B4
J43.........B4
J44.........B4
J45.........C4
J46.........C5
J47.........C5
J48.........C5
J49.........C4
J50.........C4
J51.........B5
J52.........B4
J53.........B4
J54.........C5
J55.........B5
J56.........D3
J57.........C4
J59.........C3
J60.........D3
J61.........B3
J62.........C3
J63.........C4
J64.........B2
J65.........C3
J66.........B2
J67.........D5
J68.........C5
J69.........E4
J70.........C5
J71.........B2
J72.........C3
J73.........C3
J74.........C3
J75.........C3
J76.........C3
J77.........D3
J78.........D4
J79.........C3
J80.........D4
J81.........C4
J82.........C4
J83.........C4
J84.........B5
J85.........E4
J87.........D2
J88.........D2
J89.........F2
J90.........C3
J91.........F3
J92.........D3
J93.........D3
J94.........B5
J95.........E3
J96.........D3
J97.........D4
J98.........B3
J99.........B3
J100.......B4
J101.......D3
J102........F5
J103.......B5
J104.......D4
J105.......B3
J106.......C5
J107.......D4
J109.......D4
J110.......D4
J111.......G3
J112.......G3
J113.......G3
J114.......G2
J115.......G2
J118.......E3
J119.......E3
J120.......G4
J124.......E2
J128........F3
J130.......G4
J131........F3
J133.......D1
J138.......G2
J139.......E5
J141.......E1
J142.......G4
J143.......D1
J144.......G3
J145.......E1
J146........F4
J147.......G3
J148.......G4
J149........F2
J150.......G4
J151.......G3
J153.......E4
J157.......G2
J160.......C3
J161........F1
J164.......G1
J165........F1
J167.......B5
J168.......E3
J169.......E1
J170.......E1
J171.......E1
J172.......G2
J173.......C1
J174.......D1
J176.......G2
J177.......G2
J178.......E3
J179.......E2
J180.......E2
J181.......A5
J183.......D3
J184.......D2
J186........F2
J193.......E2
J196.......D1
J200.......D5
J201.......E5
J202........F4
J203........F4
J205.......E3
J206........F5
J207.......D5
J208.......D5
J209.......E5
J210........F5
J211........F5
J212........F5
J213........F5
J214.......G5
J215.......G5
J216.......G4
J217.......G4
J218.......G4
J219.......G4
J220.......G4
J221.......G4
J222.......G4
J223.......G4
J227.......G5
J228.......G5
J229.......G5
L001.......A4
L002.......A4
L003.......B3
L004.......D4
L102.......D5
L103.......D4
L104.......F5
L105.......E4
L501.......B2
L502.......G4
L503.......D2
L504.......G4
L508.......F3
L509.......F3
L510.......F3
L512.......G4
P602.......D2
P603......G1
P604.......F1
P002A....B5
P003A....A5
P004EP..B5
P005A....C5
P006IP...A5
P119A....G5
P201B....G4
P202B....G2
P211A....F2
P212A....E2
P213A....D2
P214A....C2
P401B....A1
P402B....B1
P403B....C1
P404B....C1
P405B....C1
Q001......A2
Q002......B2
Q003......C4
Q004......C4
Q005......C4
Q006......D3
Q007......B4
Q008......B2
Q009......C5
Q101......E5
Q102......D5
Q103......E5
Q104......E5
Q105......E5
Q106.......F5
Q107......G5
Q108......G5
Q109......E4
Q110......D4
Q502......D3
Q503......E3
Q600.......F2
Q601......D2
Q602......D2
Q603......E2
Q604......E2
R002.......A5
R003.......A5
R005.......B5
R007.......B5
R008.......B4
R009.......B4
R010.......A2
R011.......A2
R012.......A2
R013.......A2
R014.......B2
R015......C3
R016......D3
R017......C3
R018......C3
R019......C3
R020......C3
R021......C4
R023......D4
R024......C4
R025......C3
R026......D3
R027......C4
R028......C4
R029......D4
R030.......B4
R031.......B1
R032......D5
R033......D5
R034......D5
R035......D5
R036......D5
R037......D5
R038......D5
R039......D5
R040......D5
R041.......B4
R042......D5
R043......D3
R044......D3
R045......D3
R046......D3
R048......C5
R050......C5
R051.......B3
R052.......B4
R053.......A5
R054.......A5
R055......C5
R056......C5
R057......C5
R058......C5
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R101.......E5
R102.......E5
R103.......E5
R104......D5
R105......D5
R106......D5
R107......D5
R108......G5
R109......G5
R110......G5
R111......G5
R112......G5
R113......G5
R114.......F5
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R118.......F5
R119.......F5
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R121.......E5
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R124.......E5
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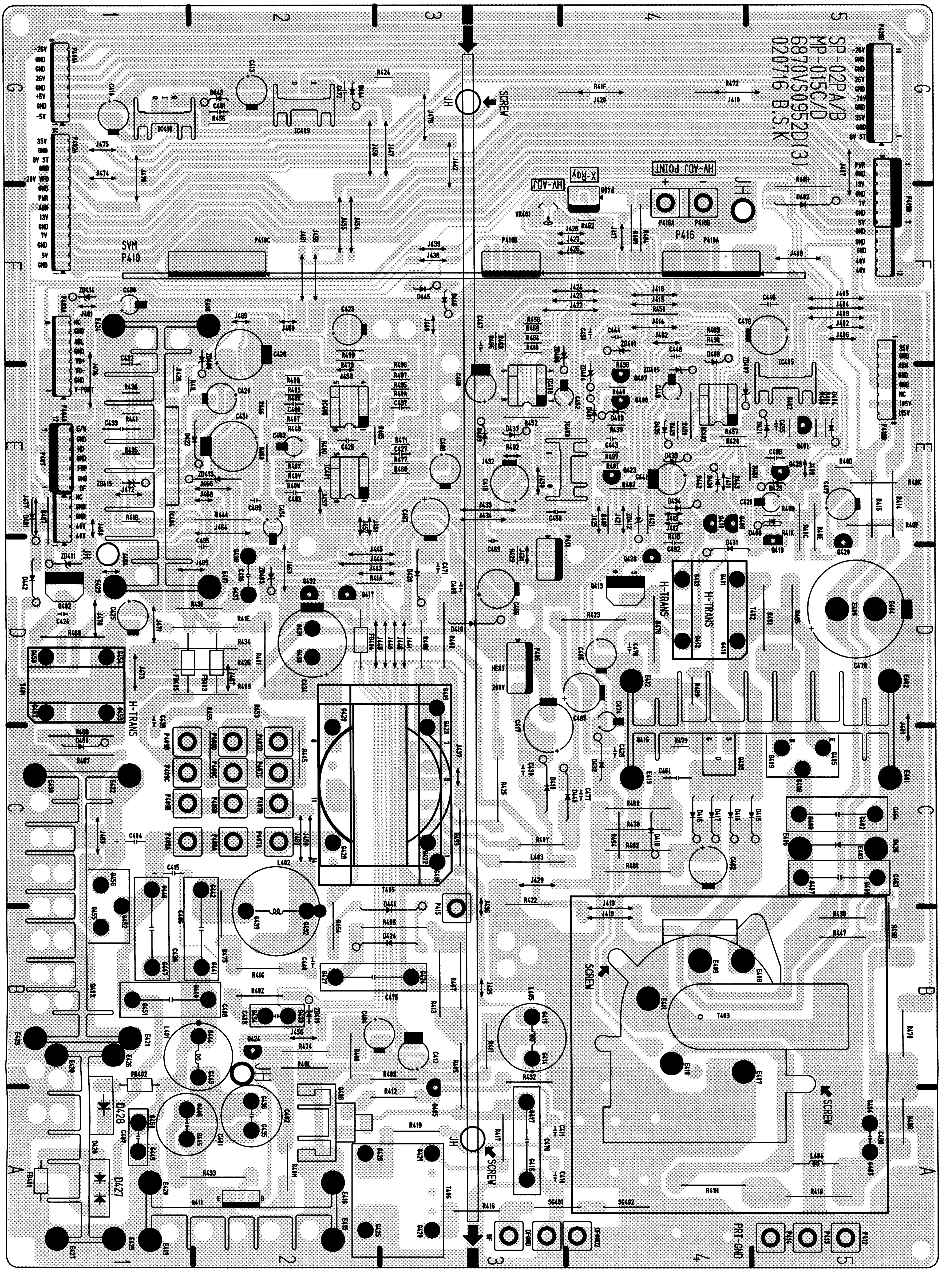
R127.......E5
R128.......E5
R129.......E5
R130......D4
R131......D4
R132.......E4
R133.......E4
R135......G5
R136.......E4
R137.......E4
R138......D4
R139.......E4
R140......D5
R141.......E5
R201......G2
R501.......B2
R503......D4
R504......D4
R505......D3
R506.......E3
R507.......F3
R508.......E3
R509......D3
R510......G4
R511......G4
R512......G4
R516.......F3
R517.......F3
R518.......F3
R519......C1
R520......D4
R521.......F4
R600.......E2
R601.......E2
R602......D2
R603.......F2
R604......D2
R605.......E2
R606.......E2
R607.......F2
R608......D2
R609.......E2
R610.......E2
R611.......F2
R612......G1
R613.......F2
R614.......E1
R615.......E1
R616.......F1
R617.......E1
R618......D2
R619......D2
R620.......F1
R621......D2
R622.......F1
R623.......F2
R624......D2
R625......C1
R626.......E2
R636......D3
R638.......E2
R639.......E1
R641.......F1
R643.......F2
R650.......F2
R651.......E2
R652.......E2
R661......D2
R662.......F1
R663.......F1
R664......G1
R665......D2
R666.......E2
R667......D1
R668......D2
R669......D2
R670.......E2
R671......D2
TU101....G5
TU102.....F4
Z103.......E5
Z106.......G5
Z114.......E5
Z117.......F5
Z129.......E4
Z142.......D4
ZD004....A2
ZD005....B2
ZD101....E5
ZD102....D4
ZD501....C2
ZD601....D2
ZD602....E2
ZD603....E2
ZD604....E2
ZD605.....F2
ZD606....F2

MAIN2 (DEF)


SP-02PA/B
MP-015C/D
6870VS0952D(3)
020716 B.S.K
SCREW
JH
HV-ADJ
X-Ray
HV-ADJ POINT
SVM
P410
P416
H-TRANS
HEAT
200V
T403
T405
T406
L402
L405
D427
D428
PRT-GND
1
2
3
4
5
A
B
C
D
E
F
G

COMPONENT LOCATION GUIDE(DEF)

C401.......A2
C402.......A2
C403 ......D3
C404 ......C1
C405 ......D4
C406.......B2
C407.......A1
C408.......B2
C409.......B2
C410.......A3
C411.......A3
C412.......B3
C413 ......G2
C414 ......G1
C415 ......C2
C416 ......D2
C417 ......D3
C418.......E3
C419.......E5
C420.......E2
C421.......E5
C423.......F2
C424 ......D1
C425 ......D1
C426.......E2
C427.......E3
C428.......F2
C429 ......C4
C430 ......C3
C431.......E2
C432.......F1
C433.......E1
C434 ......D2
C435 ......D2
C436.......B1
C437.......E3
C438 ......C1
C440.......B2
C441.......E4
C443.......E4
C444.......F4
C446.......F5
C447.......F3
C448.......F4
C449.......E4
C450.......E3
C451.......F4
C452.......E4
C454.......E2
C455.......E5
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C462 ......C4
C463 ......C5
C464 ......C5
C466 ......D3
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C468.......A5
C469.......E3
C470 ......D4
C471 ......D3
C472 ......G2
C474 ......D4
C475.......B2
C476.......A3
C477 ......C4
C478 ......D5
C479.......F5

C480.......F1
C481.......E2
C482.......E2
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C487 ......D4
C488.......E3
C489.......E2
C491 ......G2
C492.......E4
C493.......E2
D401.......E4
D402.......F5
D403.......E4
D404.......E5
D406.......F4
D408.......E5
D409.......E3
D410 ......C3
D414 ......C4
D415 ......C5
D416 ......C4
D417 ......C4
D418 ......C4
D419 ......D3
D420 ......D3
D421.......E5
D422.......E2
D423.......E5
D424.......B2
D426 ......C5
D428.......A1
D430.......E4
D431 ......D4
D432 ......C4
D433.......E4
D434.......E4
D435.......E4
D437.......E3
D440 ......C4
D441 ......C3
D442 ......D1
D443 ......G2
D444 ......G2
D445.......F3
D446.......F3
D480 ......C1
D481.......E1
DF A3
E401.......C5
E402.......D5
E403.......C5
E404.......D5
E405.......D5
E406.......C5
E407.......B4
E408.......B4
E409.......B4
E410.......B4
E411.......B4
E412.......D4
E413.......C4
E415.......A2
E416.......A2
E417.......D2
E418.......F2
E419.......A1
E420.......A1

E421.......B1
E422.......C1
E423.......D1
E424.......F1
E425.......A1
E426.......B1
E427.......A1
E428.......B1
E429.......B1
E430.......C1
FB401.....A1
FB402.....B1
FB403 ....D2
FB404 ....D2
FB405 ....D2
G401 ......C5
G402 ......C5
G403 ......A5
G404 ......A5
G405 ......C5
G406 ......C5
G407 ......C5
G408 ......C5
G409 ......C5
G410 ......D4
G411 ......D4
G412 ......D4
G413 ......D4
G414 ......B3
G415 ......B3
G416 ......A3
G417 ......A3
G418 ......C3
G419 ......D3
G420 ......A3
G421 ......A3
G422 ......C3
G423 ......C3
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G437 ......D2
G438 ......D2
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G440 ......B2
G441 ......B2
G442 ......C2
G443 ......B2
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G445 ......A2
G446 ......A2
G447 ......B1
G448 ......C1
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G451 ......B1
G452 ......C1
G453 ......D1

G454 ......D1
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IC402......E4
IC403......E3
IC404......E1
IC405......E5
IC406......E2
IC408......E3
IC409 .....G2
IC410 .....G1
J401 ....C5
J402........F5
J403........F5
J404........F5
J405........F5
J406........F5
J407........F5
J408........F5
J409 ....E5
J410.......G5
J411 ....E4
J412 ....E4
J413 ....E4
J414........F4
J415........F4
J416........F4
J417........F4
J418 ....B4
J419 ....B4
J420.......G4
J421 ....E4
J422........F3
J423........F3
J424........F3
J425 ....E4
J426........F4
J427........F4
J428........F4
J429 ....C4
J430 ....E3
J431 ....E3
J432 ....E3
J433 ....E3
J434 ....E3
J435 ....B3
J436 ....B3
J437 ....C3
J438........F3
J439........F3
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J441 ....D3
J442.......G3
J443 ....D2
J444 ....D2
J445 ....D2
J446 ....D3
J447.......G3
J448 ....D3
J449 ....D3
J450.......G3
J451 ....E3
J452 ....E2
J453 ....E2
J454........F2

J455........F2
J456 ....B2
J457 ....E2
J458........F2
J459 ....C2
J460........F2
J461........F2
J462 ....C2
J463 ....D2
J464 ....E2
J465........F2
J466 ....E2
J467 ....D2
J468 ....E2
J469 ....D1
J470.......G1
J471 ....D1
J472 ....E1
J473 ....D1
J474.......G1
J475.......G1
J476 ....E1
J477 ....E1
J478 ....D1
J479.......G3
J480 ....E1
J481........F1
J482........F4
J483 ....C1
J484 ....D1
JP1 ....E5
JP2 ....F5
JP3 ....F5
JP4 ....E5
JP5 ....F5
JP6 ....F4
JP7 ....F4
JP8 ....F4
JP9 ....F4
JP10 ....F4
JP11 ....E4
JP12.......D3
JP13.......E3
JP14.......D3
JP15.......C1
L401 ....B2
L402 ....B2
L403 ....C3
L404 ....A5
L405 ....B3
P405.......D3
P407.......E1
P408 ....F4
P411 ....E3
P412.......A5
P413.......A5
P414.......A5
P415.......B3
P401A....G1
P402A.....F1
P403A E1
P404A E1
P407A C2
P407B C2
P407C C2
P407D C2
P408A C2
P408B C2

P408C C2
P408D C2
P409A C2
P409B C2
P409C C2
P409D C2
P410A.....F5
P410B.....F3
P410C F2
P416A.....F4
P416B.....F4
P418B E5
P419B G5
P420B G5
Q401 ......E5
Q402 ......D1
Q403 ......B1
Q405 ......A3
Q406 ......A2
Q407 ......E4
Q408 ......E4
Q409 ......E4
Q410 ......E4
Q411 ......A2
Q413 ......D4
Q416 ......C4
Q417 ......D2
Q419 ......E5
Q420 ......E5
Q423 ......E4
Q424 ......B2
Q428 ......D4
Q429 ......E5
Q432 ......D2
R400 ......D3
R401 ......D2
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R403 ......D1
R404.......E5
R405.......A3
R406.......B2
R407.......B3
R408.......B2
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R411.......B3
R412.......A2
R413.......B3
R414.......E5
R415.......E5
R416.......A3
R417.......A3
R418.......F3
R419.......A3
R420.......E5
R421.......E4
R422 ......C3
R423 ......D4
R424 ......G3
R425 ......C3
R426 ......D1
R428.......E1
R429.......E3
R430.......B5
R431 ......D2
R432.......B3
R433.......A1
R434 ......D1

R435.......E1
R436.......E1
R437.......E4
R438.......F4
R439.......E4
R440.......E4
R441.......E1
R442.......E4
R443.......E4
R444.......E2
R445 ......C2
R446.......E2
R447.......B5
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R449.......E4
R450.......E4
R451.......F4
R452.......E3
R453 ......C2
R454.......B2
R455 ......C2
R456 ......G2
R457.......E4
R458.......F3
R459.......F3
R460.......E2
R461.......E5
R462.......F4
R463.......F3
R464.......F3
R465.......E3
R466.......F3
R467 ......D1
R468.......E3
R469 ......D1
R470.......B5
R471.......E3
R472 ......G4
R473.......F3
R474.......B2
R475 ......C2
R476 ......D4
R477.......E3
R478 ......C4
R479 ......C4
R480 ......C4
R481 ......C4
R482 ......C4
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R484.......F4
R485 ......D5
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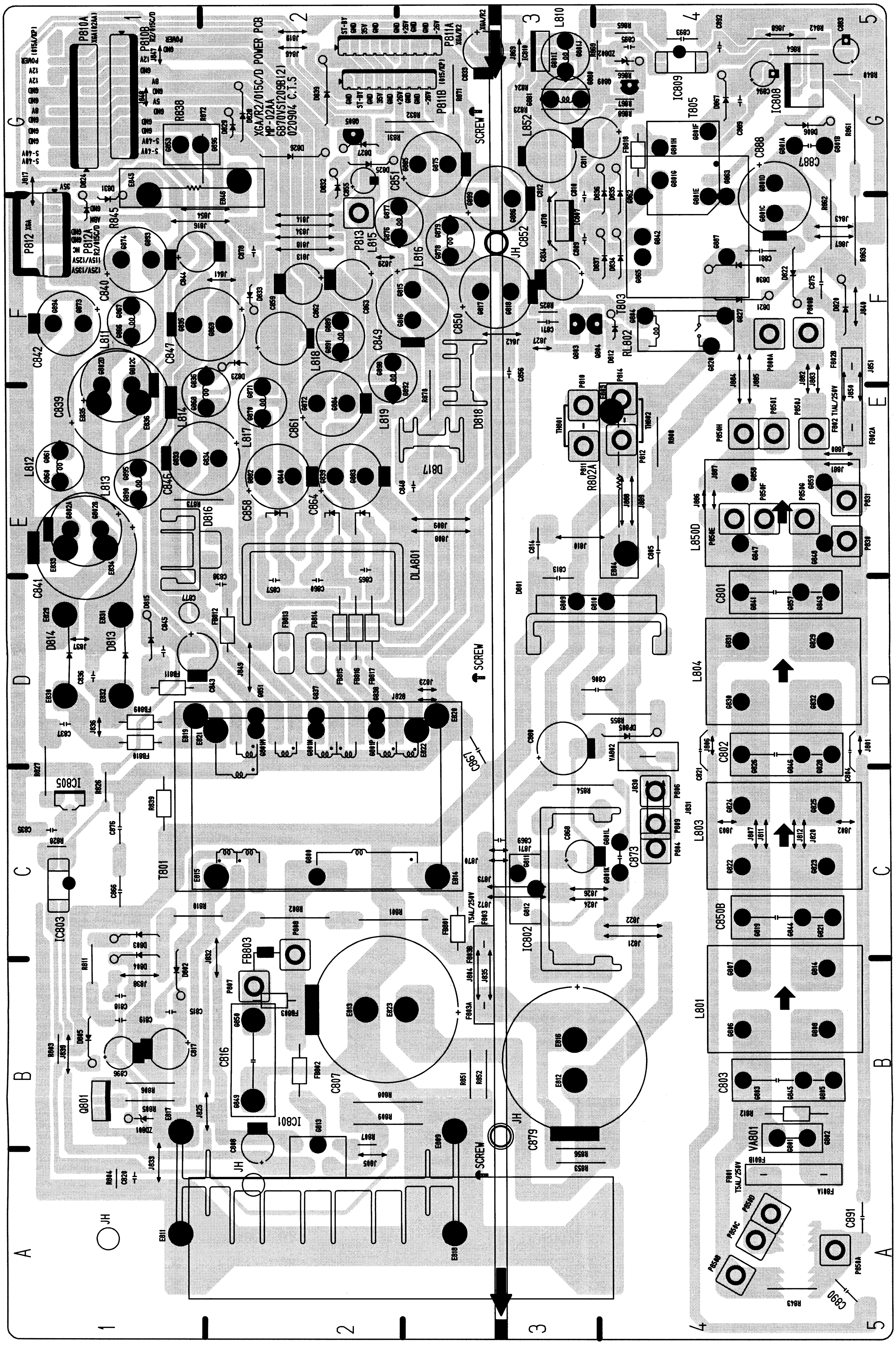
R487 ......C1
R488 ......C1
R489 ......D4
R490.......F4
R491 ......D5
R492.......E3
R493 ......C3
R494 ......C4
R495.......E3
R496.......E3
R497.......E3
R498 ......C5
R499.......F3
R40A E3
R40B E5
R40C......D5

R40D E5
R40E E5
R40F E5
R40G......E5
R40H F5
R40I........E4
R40J.......E4
R40K......E5
R40L.......B2
R40M......A2
R40N......D3
R40P E4
R40Q......E2
R40R E2
R40S E2
R40T E2
R40U E2
R40V E2
R40W E2
R40X E2
R40Y......C4
R40Z B2
R41A......D3
R41B E1
R41D E4
R41E......D1
R41F......G3
R41G......B2
R41H......A5
R41K E5
R41L.......E2
R41M......F4
SG401 ....A4
SG402....A4
T401.......D1
T402.......D4
T403.......B4
T405.......C3
T406.......A3
TP1.........F5
TP2.........F5
TP3.........B5
TP4.........F4
TP5.........F3
TP6.........E1
TP7.........E1
TP8 ....G1
TP9 ....G1
TP10.......F1
TP11.......E1
TP12.......F1
TP13 ......G1
TP14 ......G1
VR401 ....F3
ZD401.....F4
ZD403....D2
ZD404 ....E4
ZD405 ....E4
ZD406 ....E4
ZD407 ....E5
ZD408 ....E2
ZD410 ....B2
ZD411 ....D1
ZD412 ....E4
ZD413 ....E2
ZD414.....F1
ZD415 ....E1

SMPS


XGA/R2/015C/D POWER PCB
MP-02AA
6870VS1209B(2)
020904 C.T.S
P810A
P810B
P812
P812A
P811A
P811B
P813
L810
L852
C852
C850
C851
L816
L815
IC809
IC808
T805
C888
C887
C840
C842
L811
C839
C847
L814
L817
C861
L818
L819
C849
D818
D817
L812
L813
C846
C858
C864
D816
DLA801
C841
D814
D813
T801
IC805
IC803
Q801
C816
C807
FB803
IC801
C879
IC802
C873
RL802
T803
R802A
R838
R845
L850D
C801
L804
C802
L803
C850B
L801
C803
VA801
C891
SCREW
JH
A
B
C
D
E
F
G
1
2
3
4
5

COMPONENT LOCATION GUIDE(SMPS)

C801 ......D5
C802 ......D5
C803.......B5
C804 ......C5
C805.......E4
C806 ......D4
C807.......B2
C808.......B2
C809.......F3
C810.......F3
C811 ......G4
C812 ......G3
C813 ......D3
C814.......E3
C815.......B1
C816.......B2
C817.......B1
C818.......B1
C819.......B1
C820.......A1
C821 ......C4
C833 ......G3
C834.......F3
C835 ......C1
C836 ......D1
C837 ......D1
C838 ......D2
C839.......E1
C840.......F1
C841.......E1
C842.......F1
C843 ......D2
C844.......F2
C845 ......D1
C846.......E2
C847.......F2
C848.......E3
C849.......F3
C850.......F3
C851 ......G3
C852.......F3
C855 ......G2
C856.......F3
C857 ......D2
C858.......E2
C859.......F2
C860 ......D2
C861.......E2
C862.......F2
C863.......F2
C864.......E2
C865.......E2
C866 ......C1
C867 ......C3
C868 ......C4
C869 ......C3
C871.......F3
C873 ......C4
C875.......F5
C876 ......C1
C877 ......D1
C878.......F2
C879.......B3
C880 ......D3
C881.......F4
C883 ......G5
C887 ......G5
C888.......F4
C889 ......G4
C890.......A5
C891.......A5
C892 ......G4
C893 ......G4
C894 ......G4
C895 ......G4
C896.......B1
C850B....C5
D801 ......D4
D802.......B1
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D804 ......C1
D805.......B1
D806 ......G5
D812.......F4
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D814 ......D1
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D824 ......G1
D825 ......G3
D826 ......G2
D827 ......G2
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D829 ......G2
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D831 ......G1
D832 ......G2
D833.......F2
D834.......F4
D835 ......G4
D836 ......G4
D837.......F4
D839 ......G2
D867 ......G4
DLA801 ..E2
DP805....D4
E803.......E4
E804.......E4
E809.......B3
E811 ....A1
E812.......B3
E813.......B2
E814.......C3
E815.......C2
E816.......B3
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E818.......A3
E819.......D2
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E823.......B3
E829.......D1
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E831.......D1
E832.......D1
E833.......E1
E834.......E1
E835.......E1
E836.......E1
E845 ......G1
E846 ......G2
F801A.....A5
F801B.....A4
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F802B.....F5
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F803B C3
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FB811 ....D1
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FB813 ....D2
FB814 ....D2
FB815 ....D2
FB816 ....D2
FB817 ....D2
FB818 ....G4
G800 ......C2
G801 ......B4
G802 ......B5
G803 ......B4
G804.......F4
G805 ......B5
G806 ......B4
G807 ......B4
G808 ......B5
G809 ......D3
G810 ......D4
G811 ......C3
G812 ......C3
G813 ......B2
G814 ......B5
G815.......F3
G816.......F3
G817.......F3
G818.......F3
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G820.......F4
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G822 ......C4
G823 ......C5
G824 ......C4
G825 ......C5
G826 ......D4
G827.......F4
G828 ......D5
G829 ......D5
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G831 ......D4
G832 ......D5
G833 ......E2
G834 ......E2
G835.......F2
G836.......F2
G837 ......D2
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G842.......F4
G843 ......D5
G844 ......C5
G845 ......B5
G846 ......D5
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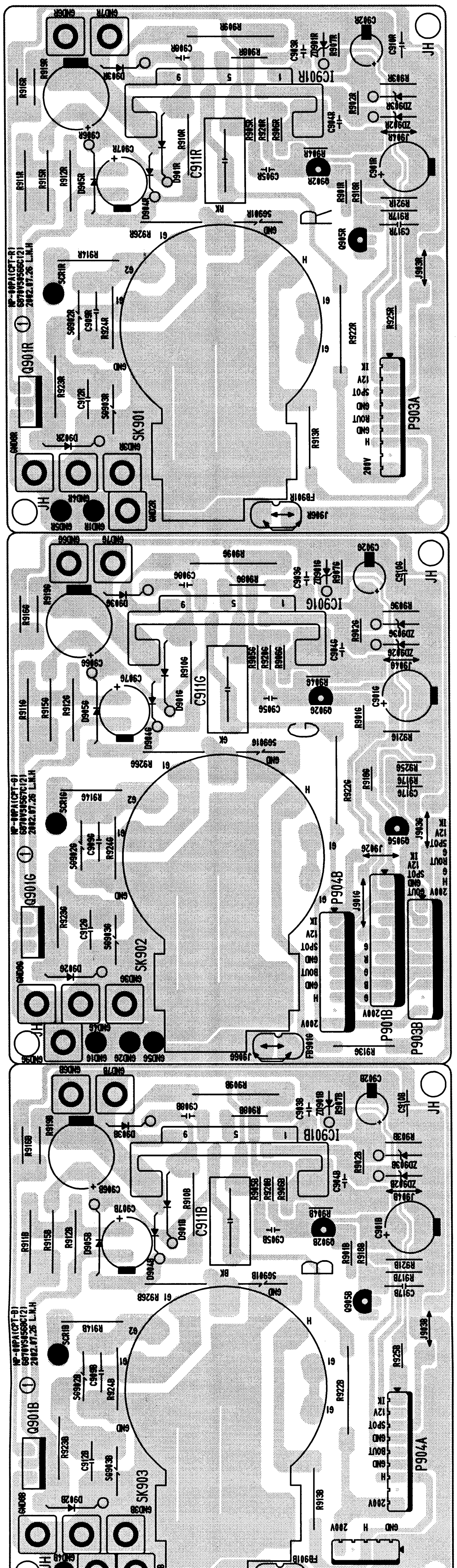
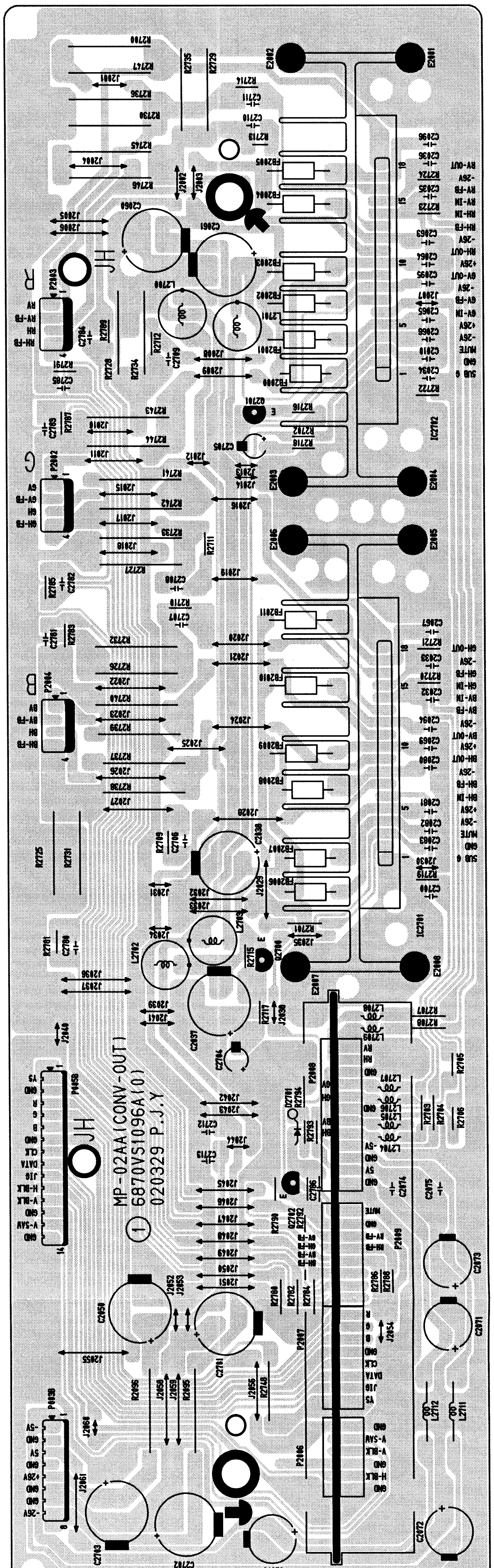
G853......G1
G857 ......D5
G858 ......E4
G859 ......E5
G860 ......E1
G861 ......E1
G862.......F4
G863.......F4
G865.......F4
G866.......F1
G867.......F1
G868 ......E2
G869.......F2
G870 ......E2
G871 ......E2
G872 ......E2
G873.......F1
G874.......F1
G875......G3
G876.......F3
G877.......F3
G878.......F3
G879.......F3
G880......G3
G881 ......G3
G882 ......E2
G883 ......E2
G884 ......E2
G885......G3
G886.......F3
G887.......F4
G889.......F2
G890 ......E1
G891.......F2
G892 ......E3
G893.......F1
G894.......F1
G895 ......E1
G896......G2
G898.......F3
G899.......F3
G801A....G5
G801B....G5
G801C....F4
G801D ...G4
G801E F4
G801F....G4
G801G ...G4
G801H ...G4
G801I G3
G801J G3
G801K....C4
G801L C4
G801M ...D2
G801N....D2
G801P....D2
G802A....E1
G802B....E1
G802C....F1
G802D....F1
IC801......B3
IC802 .....C3
IC803 .....C1
IC805 .....C1
IC807......F3
IC808 .....G5
IC809 .....G4
IC810 .....G3
J801 ....D5
J802 ....C5
J803 ....C4
J804 ....B3
J805 ....A3
J806 ....D4
J807 ....C4
J808 ....E3
J809 ....E3
J810 ....E4
J811 ....C4
J812 ....C5
J813........F2
J814........F2
J816........F2
J817........F1
J818........F2
J819.......G2
J820 ....C5
J821 ....C4
J822 ....C4
J823 ....D3
J824 ....C4
J825 ....B2
J826 ....C4
J827........F3
J828 ....D3
J829........F3
J830 ....C4
J831 ....C4
J832 ....C2
J833 ....A1
J834........F2
J835 ....B3
J836 ....D1
J837 ....D1
J838 ....B1
J839 ....B1
J840........F5
J841........F2
J842........F3
J843........F5
J846.......G2
J847.......G1
J848.......G1
J849 ....D2
J850........F5
J851........F5
J854........F2
J867........F5
J868.......G5
J869.......G3
J870 ....C3
J871 ....C3
J872 ....C3
J873 ....C3
J878........F3
J880 ....E5
J881 ....E5
J882 ....E5
J883 ....E5
J884 ....E4
J885 ....E4
J886 ....E4
J887 ....E4
J888 ....E4
J889 ....E4
L801 ....B5
L803.......C5
L804.......D5
L810.......G3
L811 ....F1
L812.......E1
L813.......E1
L814 ....F2
L815 ....F3
L816 ....F3
L817.......E2
L818 ....F2
L819.......E3
L852.......G3
L850D.....E5
P804.......C4
P806.......C4
P807.......B2
P808.......C2
P809.......C4
P810.......E3
P811 ....E3
P812.......E4
P813.......F2
P814.......E4
P830.......E5
P831 ....E5
P800A.....F4
P800B.....F5
P810A....G1
P810B....G1
P811A....G2
P812A.....F1
P850A A5
P850B A4
P850C A4
P850D A4
P850E E4
P850F.....E4
P850G....E5
P850H E4
P850I......E4
P850J.....E5
Q801 ......B1
Q803.......F3
Q804.......F4
Q805......G2
Q809......G4
R800.......E4
R801 ......C3
R802 ......C2
R803.......B1
R804.......A1
R805.......B1
R806.......B1
R807.......B2
R808.......B2
R809.......B2
R810 ......C2
R811 ......C1
R812.......B4
R823 ......G4
R824 ......G4
R825.......F3
R826 ......C1
R827 ......D1
R828 ......C1
R831 ......G2
R832 ......G2
R838 ......G2
R839 ......C1
R840 ......G5
R842 ......G4
R843.......A5
R845 ......G2
R851.......B3
R852.......B3
R853.......A4
R854 ......C4
R855 ......D4
R856.......B4
R861 ......G5
R862 ......G5
R863 ......G5
R864 ......G4
R865 ......G4
R866 ......G4
R867 ......G4
R868 ......G4
R869 ......G4
R870.......E3
R871 ......G3
R872 ......G2
R873.......E2
R802A E4
RL802.....F4
T801 ....D3
T803 ....F4
T805 ....F4
VA801 ....B5
VA802 ....D4
ZD801 ....B1
ZD802 ....G4

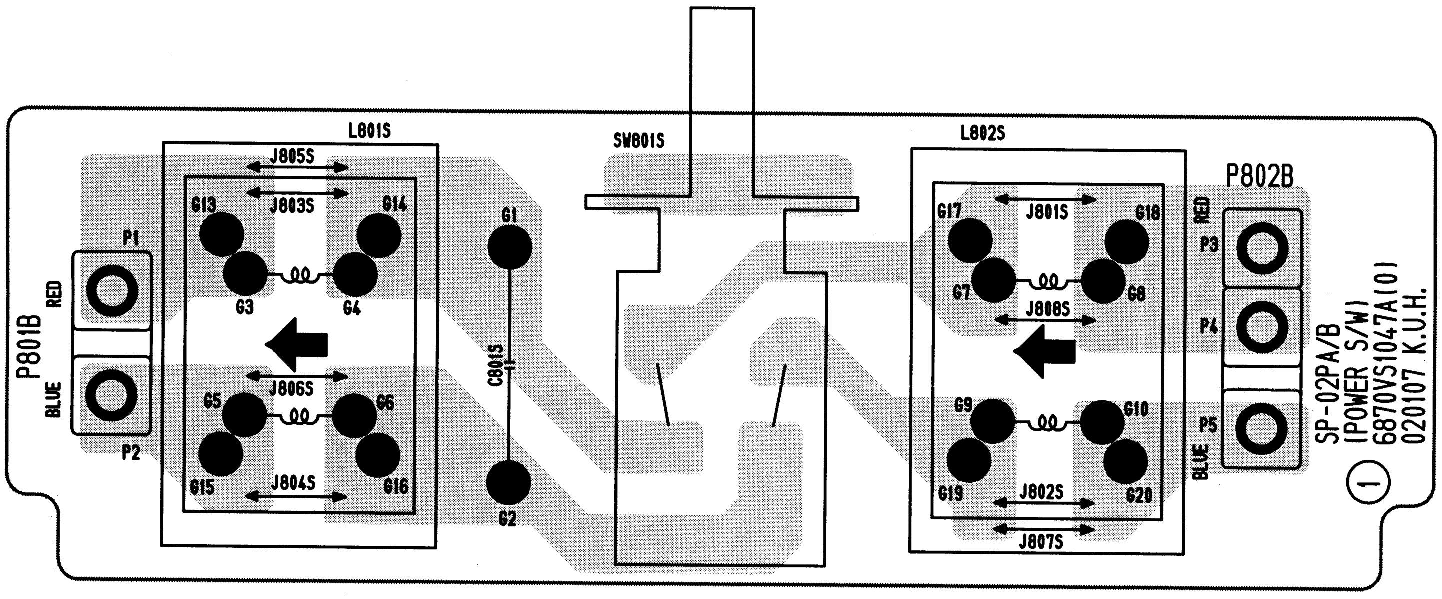
PRT


IC901R
IC901G
IC901B
SK901
SK902
SK903
P903A
P904B
P901B
P903B
P904A
P902B
Q901R
Q901G
Q901B
C911R
C911G
C911B
JH

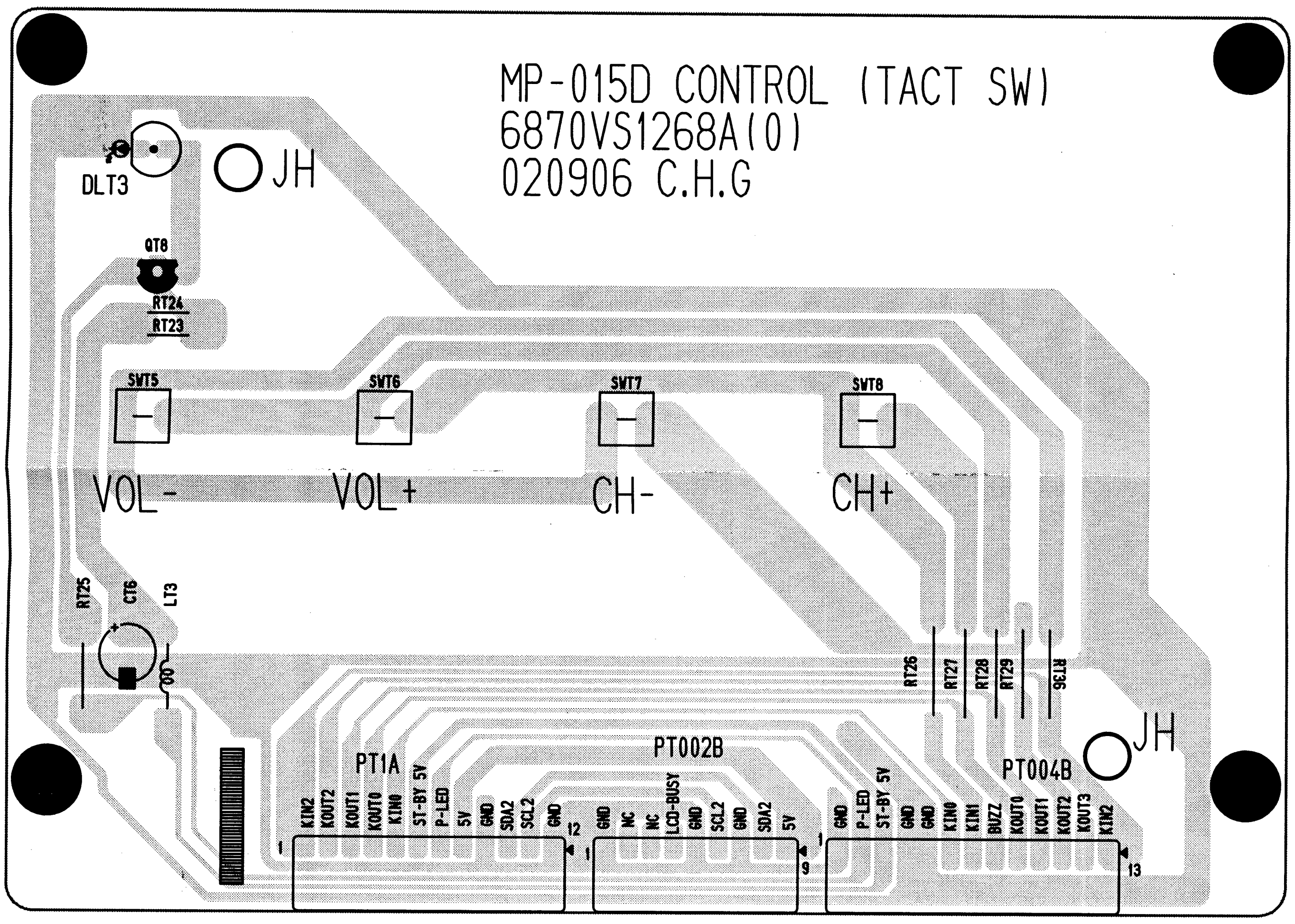
CONV-OUT


MP-02AA(CONV-OUT)
6870VS1096A(01)
020329 P.J.Y
JH
R
G
B

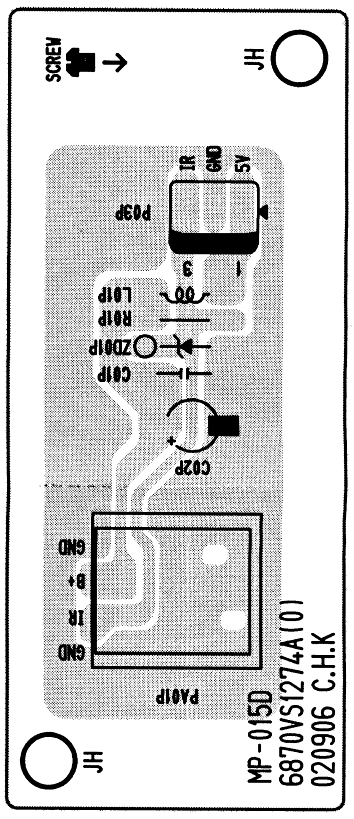
POWER S/W


L801S
SW801S
L802S
P802B
J805S
J803S
G13
G14
G1
G17
J801S
G18
RED
P3
P1
RED
P801B
BLUE
G3
G4
C801S
G7
G8
J808S
P4
G5
G6
J806S
G9
G10
BLUE
P5
P2
G15
J804S
G16
G2
G19
J802S
G20
J807S
SP-02PA/B
(POWER S/W)
6870VS1047A(0)
020107 K.U.H.
①

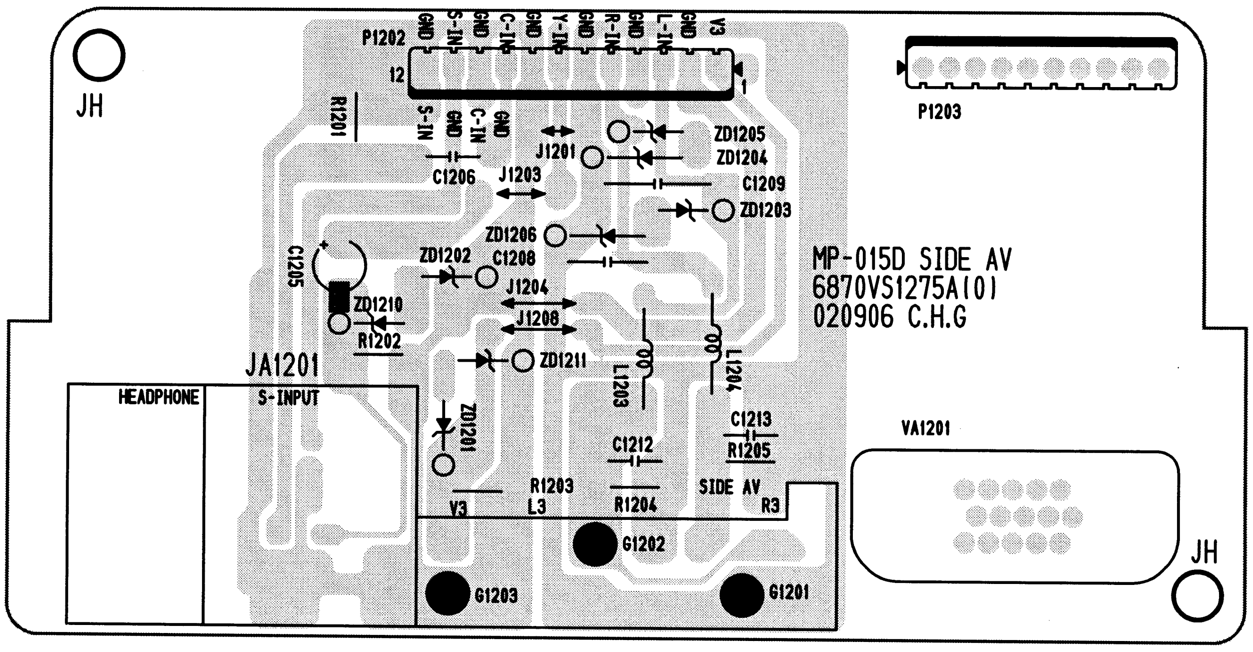
CONTROL TACT SW


MP-015D CONTROL (TACT SW)
6870VS1268A(0)
020906 C.H.G
DLT3
JH
QT8
RT24
RT23
SWT5
SWT6
SWT7
SWT8
VOL-
VOL+
CH-
CH+
RT25
CT6
LT3
RT26
RT27
RT28
RT29
RT36
JH
PT1A
PT002B
PT004B
KIN2
KOUT2
KOUT1
KOUT0
KIN0
ST-BY 5V
P-LED
5V
GND
SDA2
SCL2
GND
12
1
GND
NC
NC
LCD-BUSY
GND
SCL2
GND
SDA2
5V
1
9
GND
P-LED
ST-BY 5V
GND
GND
KIN0
KIN1
BUZZ
KOUT0
KOUT1
KOUT2
KOUT3
KIN2
13

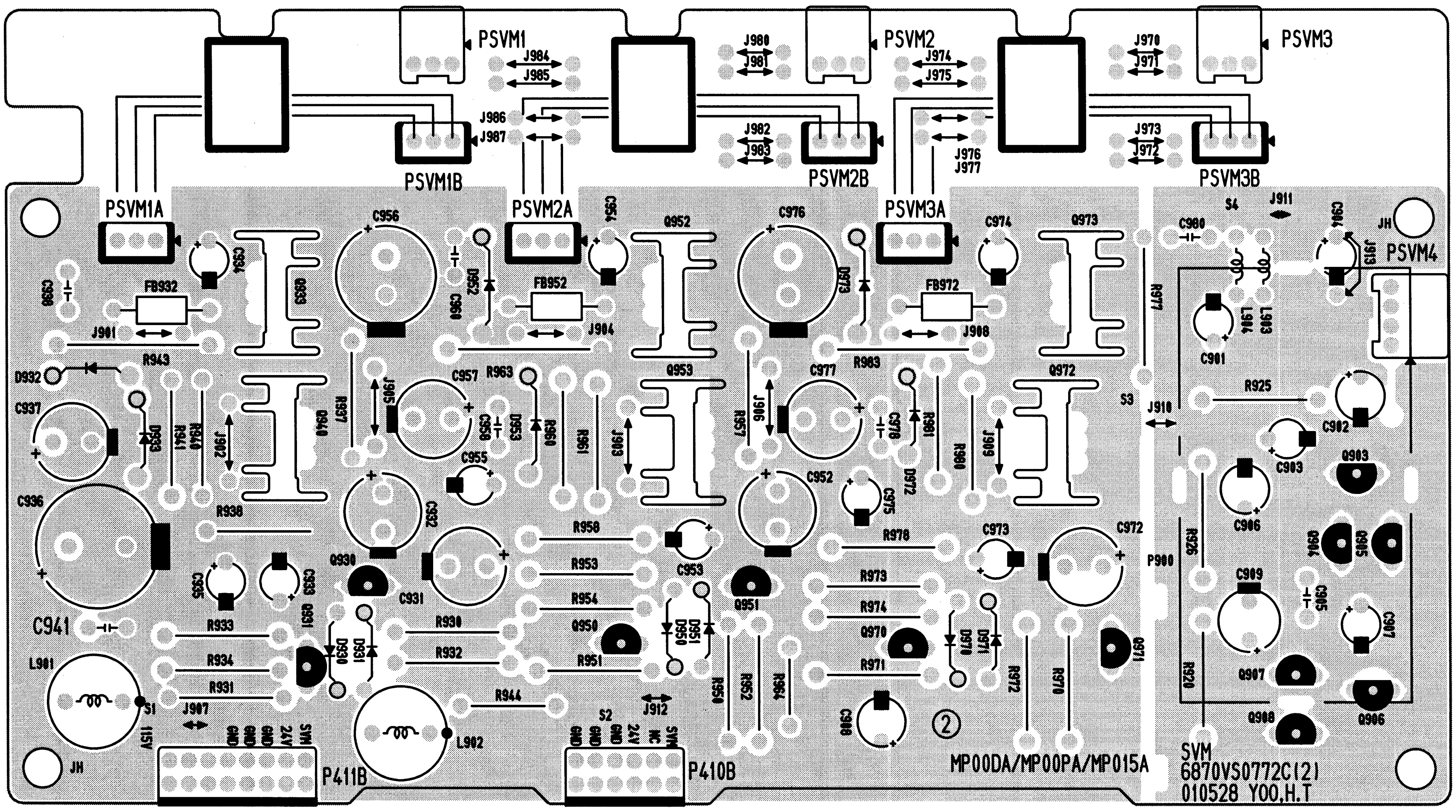
PRE-AMP


SCREW
JH
IR
GND
5V
P03P
3
1
L01P
R01P
ZD01P
C01P
C02P
GND
B+
IR
GND
PA01P
JH
MP-015D
6870VS1274A(0)
020906 C.H.K

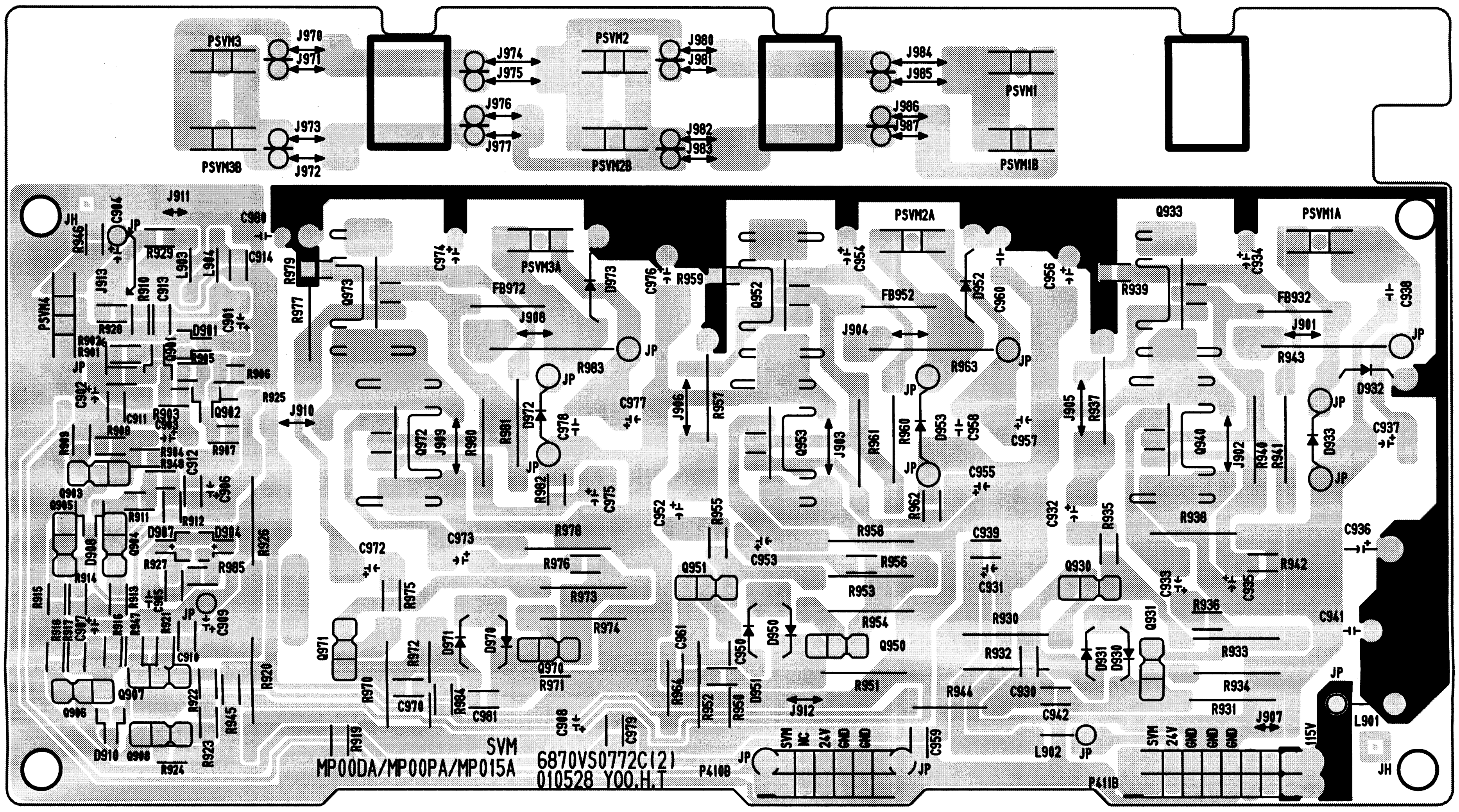
SIDE AV


JH
P1202
GND
S-IN
GND
C-IN
GND
Y-IN
GND
R-IN
GND
L-IN
GND
V3
12
1
P1203
R1201
S-IN
GND
C-IN
GND
J1201
ZD1205
ZD1204
C1206
J1203
C1209
ZD1203
ZD1206
C1205
ZD1202
C1208
MP-015D SIDE AV
6870VS1275A(0)
020906 C.H.G
ZD1210
J1204
R1202
J1208
JA1201
ZD1211
L1203
L1204
HEADPHONE
S-INPUT
ZD1201
C1213
VA1201
C1212
R1205
R1203
SIDE AV
V3
L3
R1204
R3
G1202
JH
G1203
G1201

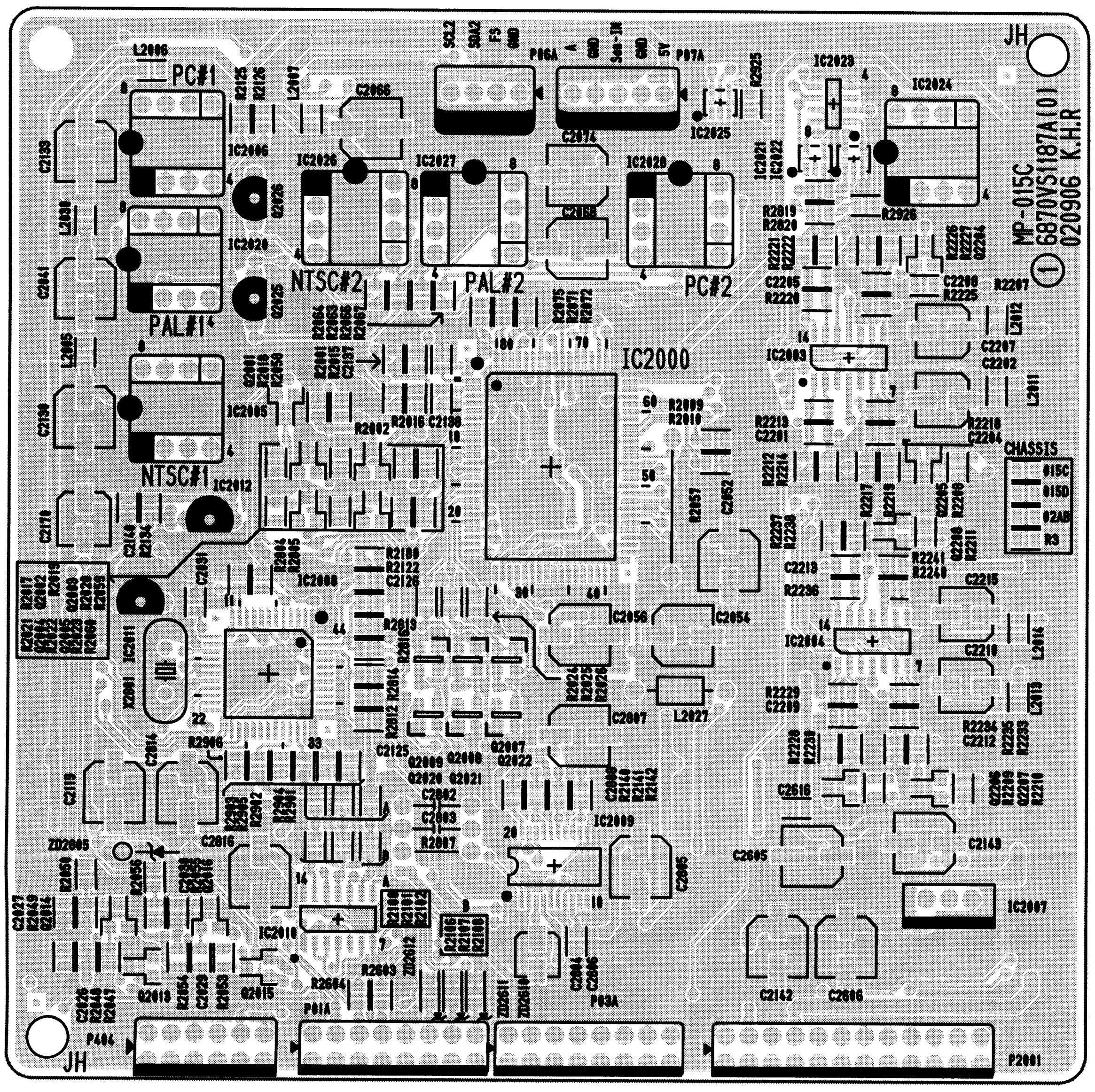
VM (TOP)


PSVM1
PSVM2
PSVM3
J984
J985
J986
J987
J980
J981
J982
J983
J974
J975
J976
J977
J970
J971
J972
J973
PSVM1B
PSVM2B
PSVM3B
PSVM1A
PSVM2A
PSVM3A
PSVM4
C956
C976
Q952
Q973
C974
C980
S4
J911
JH
FB932
FB952
FB972
J901
J904
J908
R943
D932
C937
C936
C941
L901
L902
J907
J912
J910
S3
S2
S1
P900
R925
C902
C903
Q903
C901
C906
C909
Q907
Q908
Q906
R930
R932
R933
R934
R931
R944
R951
R953
R954
R958
R963
R973
R974
R971
R978
R983
Q930
Q950
Q951
Q970
Q953
Q972
C968
115V
24V
GND
SVM
NC
P411B
P410B
MP00DA/MP00PA/MP015A
SVM
6870VS0772C(2)
010528 YOO.H.T
②

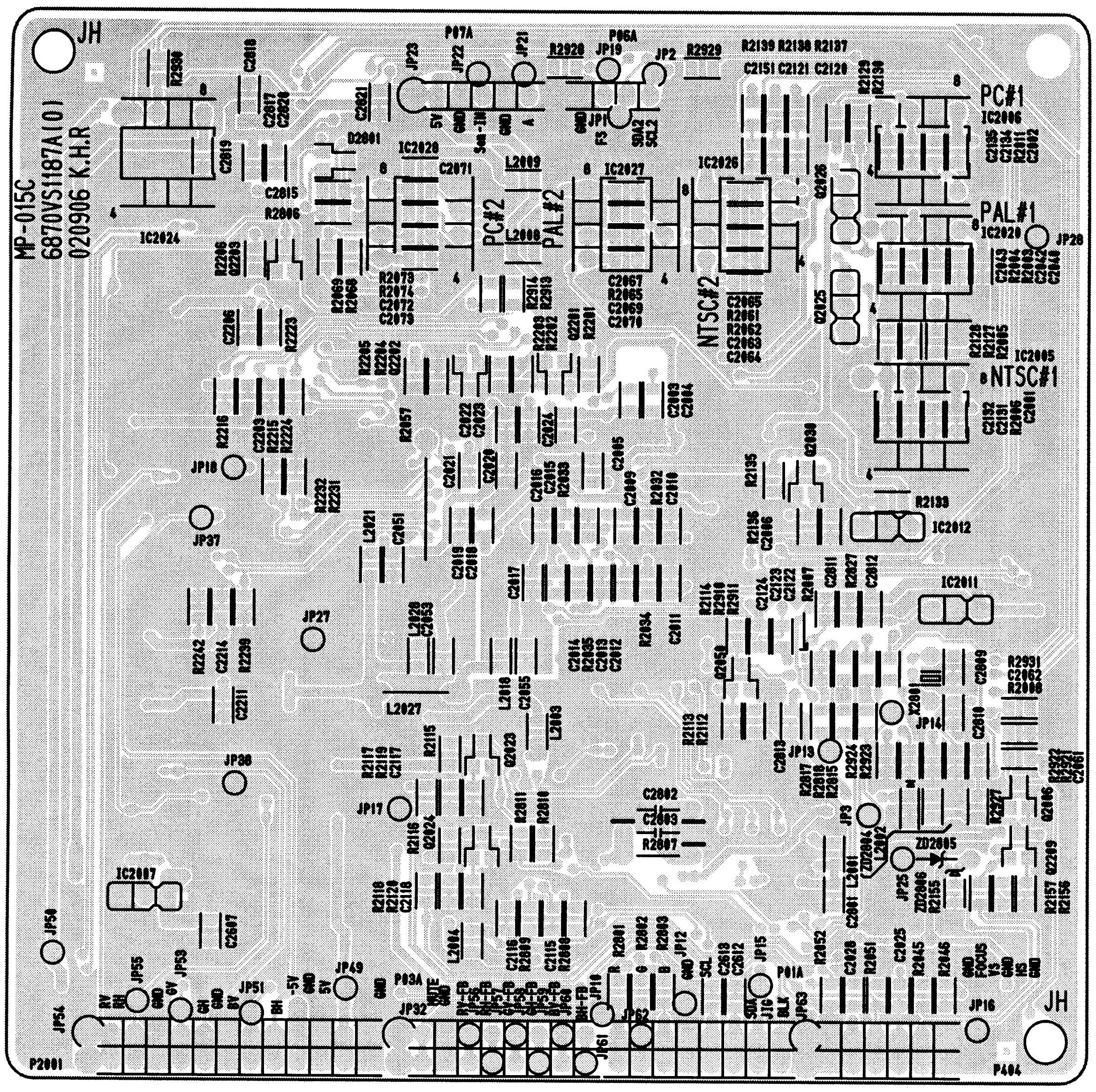
VM (BOTTOM)


PSVM3
PSVM3B
PSVM2
PSVM2B
PSVM1
PSVM1B
J970
J971
J973
J972
J974
J975
J976
J977
J980
J981
J982
J983
J984
J985
J986
J987
JH
C904
J911
C980
PSVM4
Q933
PSVM2A
PSVM1A
PSVM3A
FB972
FB952
FB932
J908
J904
J901
JP
R983
R963
R943
D932
C937
J910
C936
C941
R930
R932
R933
R934
R931
R944
R951
R953
R954
R956
R958
R973
R974
R976
R978
R971
Q930
Q950
Q951
Q970
Q971
Q906
Q907
C972
C973
C939
C931
C930
C942
L902
L901
J907
J912
115V
24V
GND
SVM
NC
P410B
P411B
SVM
MP00DA/MP00PA/MP015A
6870VS0772C(2)
010528 YOO.H.T

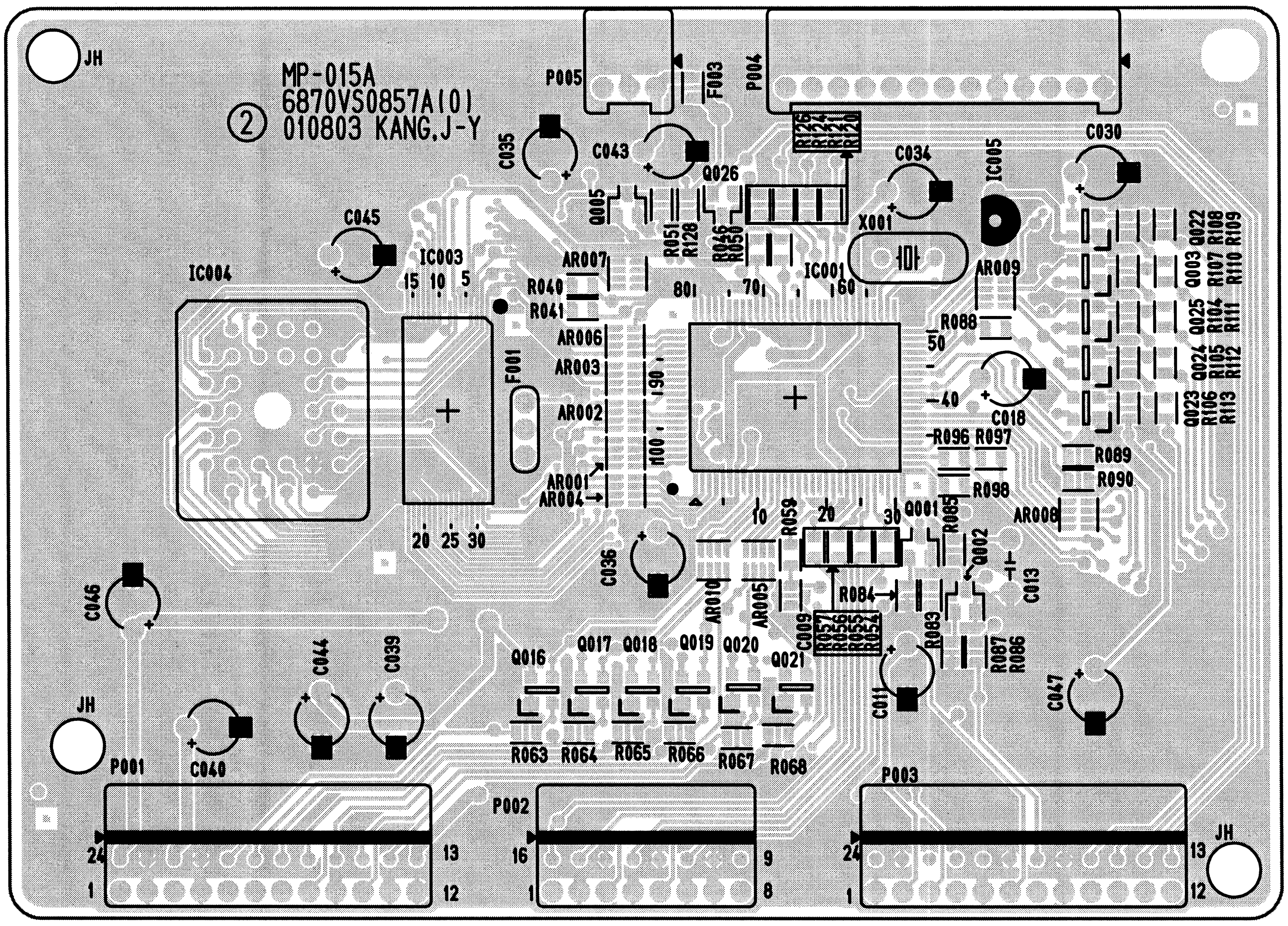
CONVERGENCE (TOP)


JH
PC#1
NTSC#2
PAL#2
PC#2
PAL#1
NTSC#1
IC2000
CHASSIS
MP-015C
6870VS1187A(0)
020906 K.H.R
P2001
P404
P01A
P03A
P06A
P07A
IC2007
IC2009
IC2010
IC2011

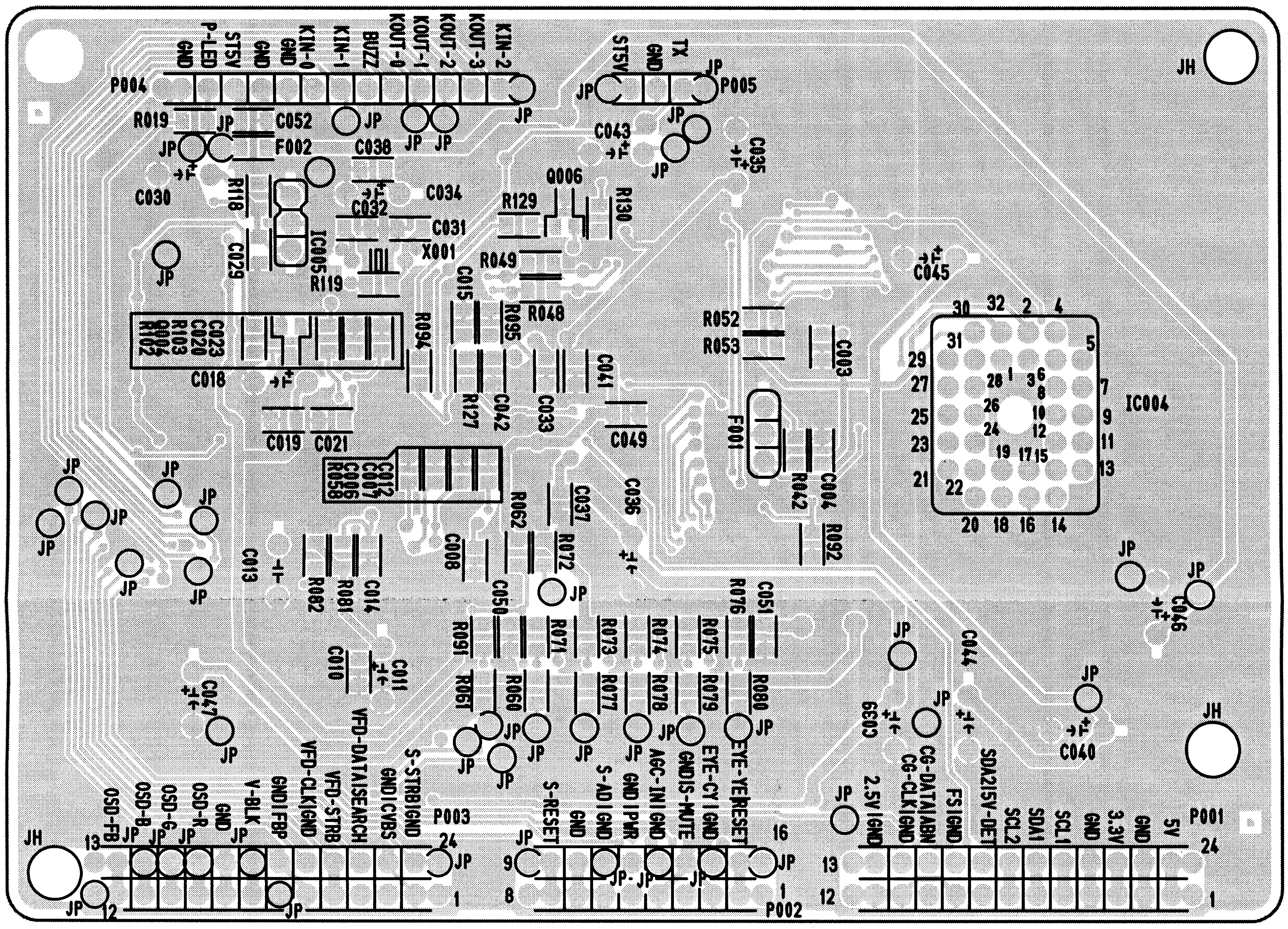
CONVERGENCE (BOTTOM)


JH
MP-015C
6870VS1187A(0)
020906 K.H.R
PC#1
PAL#1
NTSC#1
PC#2
PAL#2
NTSC#2
IC2024
IC2007
IC2012
IC2011
P2001
P404
P07A
P06A
P01A
P03A

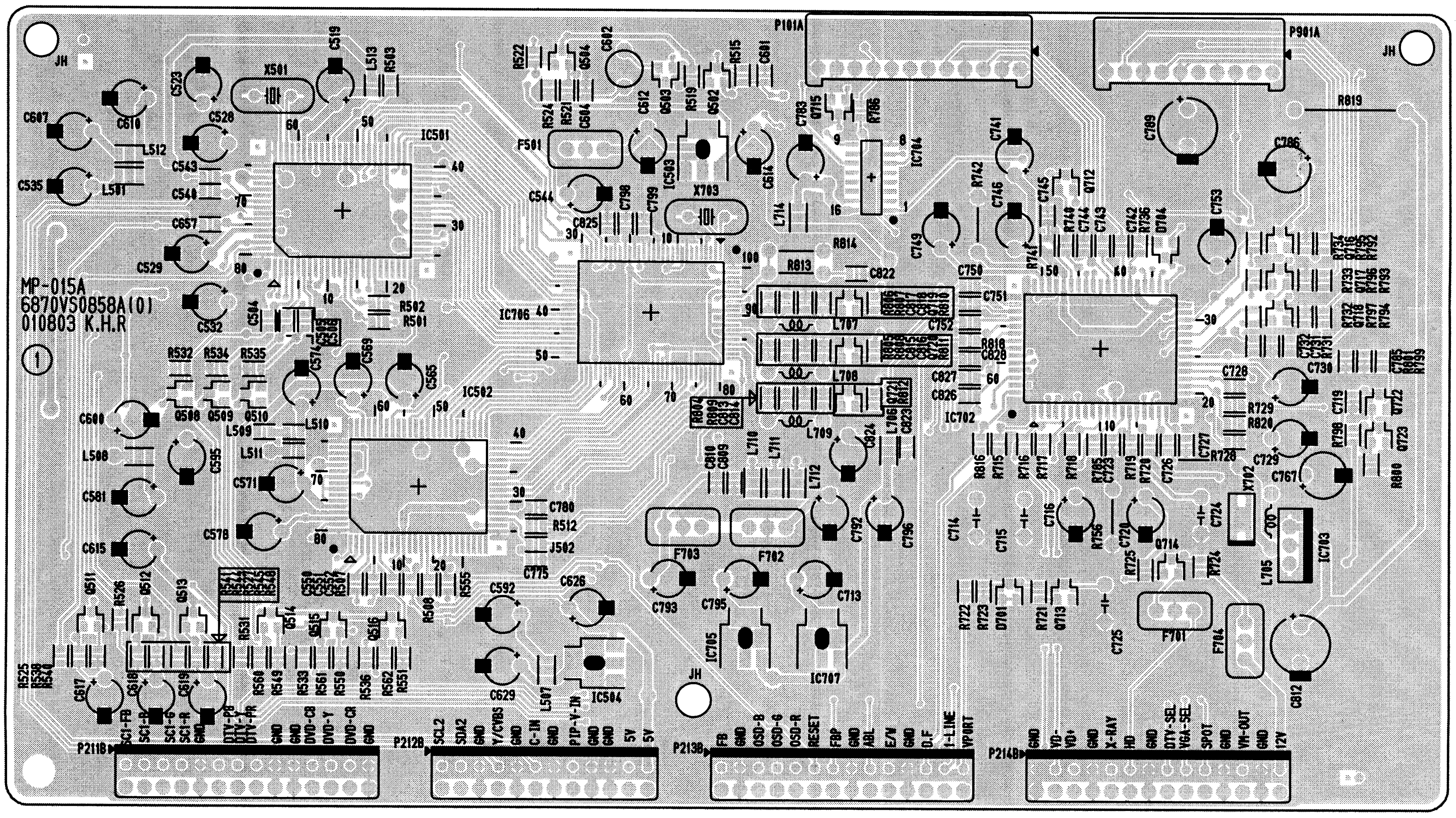
MICOM (TOP)


MP-015A
6870VS0857A(0)
② 010803 KANG.J-Y
JH
P005
F003
P004
C035
C043
Q026
C034
IC005
C030
Q005
R051
R128
X001
IC001
AR009
Q022 R108 R109
Q003 R107 R110
Q025 R104 R111
Q024 R105 R112
Q023 R106 R113
C045
IC003
15 10 5
IC004
AR007
R040
R041
80
70
60
AR006
AR003
F001
AR002
R088
50
40
C018
R096 R097
R089
R090
AR001
AR004
R098
AR008
20 25 30
10
R059
20
30
Q001
R085
Q002
C013
C036
AR010
AR005
R084
C009
R057 R056 R055 R054
R083
R087
R086
C046
C044
C039
Q016
Q017
Q018
Q019
Q020
Q021
C011
C047
R063
R064
R065
R066
R067
R068
P001
C040
P002
P003
24
13
1
12
16
9
8

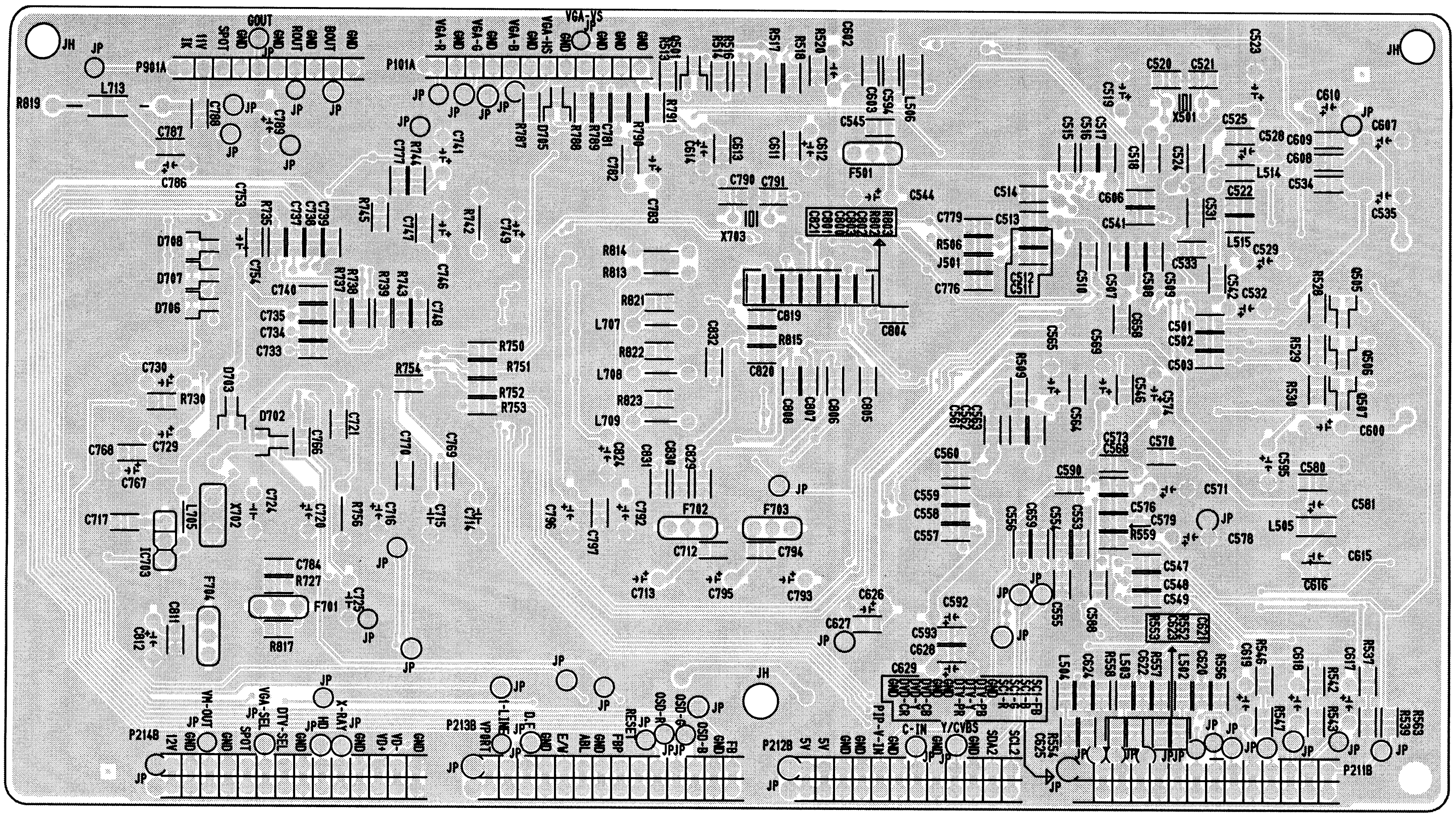
MICOM (BOTTOM)


GND
P-LED
ST5V
GND
KIN-0
KIN-1
BUZZ
KOUT-0
KOUT-1
KOUT-2
KOUT-3
KIN-2
ST5V
GND
TX
P004
P005
JP
JH
R019
C052
F002
C038
C043
C035
C030
R118
C034
C032
C031
Q006
R129
R130
X001
IC005
R119
C029
R049
C015
R095
R048
C045
C023 C020 R103 R102
R094
R052
R053
C003
30 32 2 4
31
5
29
27
28
3
6
8
7
IC004
25
26
10
9
24
12
23
11
19 17 15
13
21
22
20 18 16 14
C018
C019
C021
R127
C042
C033
C041
C049
F001
R042
C004
C012 C007 C006 R058
R062
C037
C036
R092
C013
R082
R081
C014
C008
R072
C050
R076
C051
C046
R091
R071
R073
R074
R075
C010
C011
C044
C047
R061
R060
R077
R078
R079
R080
C039
C040
OSD-FB
OSD-B
OSD-G
OSD-R
GND
V-BLK
GND|FBP
VFD-CLK|GND
VFD-STRB
VFD-DATA|SEARCH
GND|CVBS
S-STRB|GND
P003
S-RESET
GND
S-AD|GND
GND|PWR
AGC-IN|GND
GNDIS-MUTE
EYE-CY|GND
EYE-YE|RESET
P002
2.5V|GND
CG-CLK|GND
CG-DATA|AGN
FS|GND
SDA2|5V-DET
SCL2
SDA1
SCL1
GND
3.3V
GND
5V
P001
13
12
24
1
9
8
16
JP-

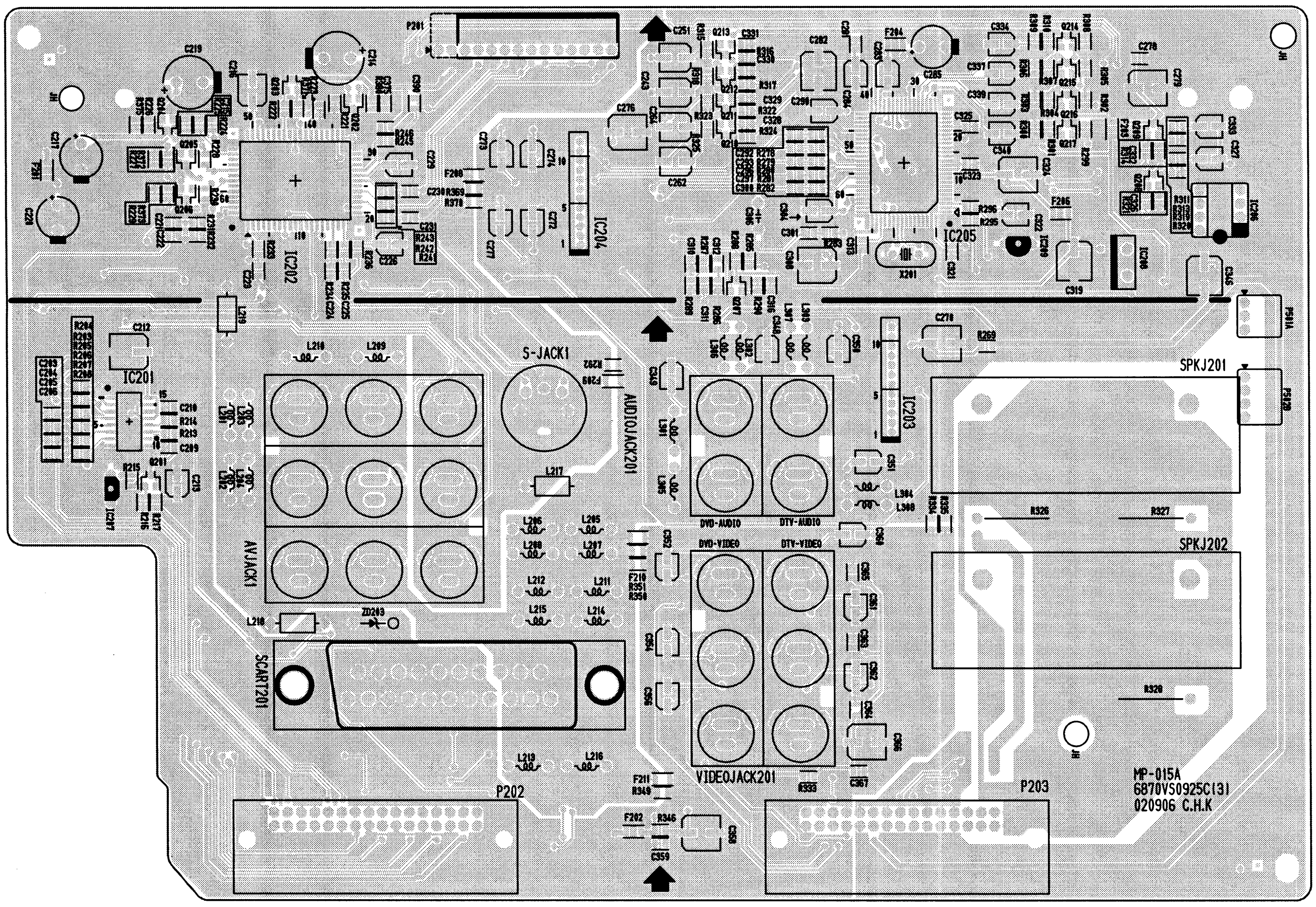
100HZ (TOP)


P101A
P901A
IC501
IC502
IC504
IC702
IC703
IC704
IC706
IC707
IC705
X501
X703
X702
F501
F701
F702
F703
F704
MP-015A
6870VS0858A(0)
010803 K.H.R
P211B
P212B
P213B
P214B
SCI-FB
SCI-G
SCI-R
GND
DTV-FB
DTV-FR
DVD-CB
DVD-Y
DVD-CR
SCL2
SDA2
Y/CVBS
C-IN
PIP-V-IN
5V
FB
OSD-B
OSD-G
OSD-R
RESET
FBP
ABL
E/V
D.F
I-LINE
VPORT
VD-
VD+
X-RAY
HD
DTV-SEL
VGA-SEL
SPOT
VM-OUT
12V
JH

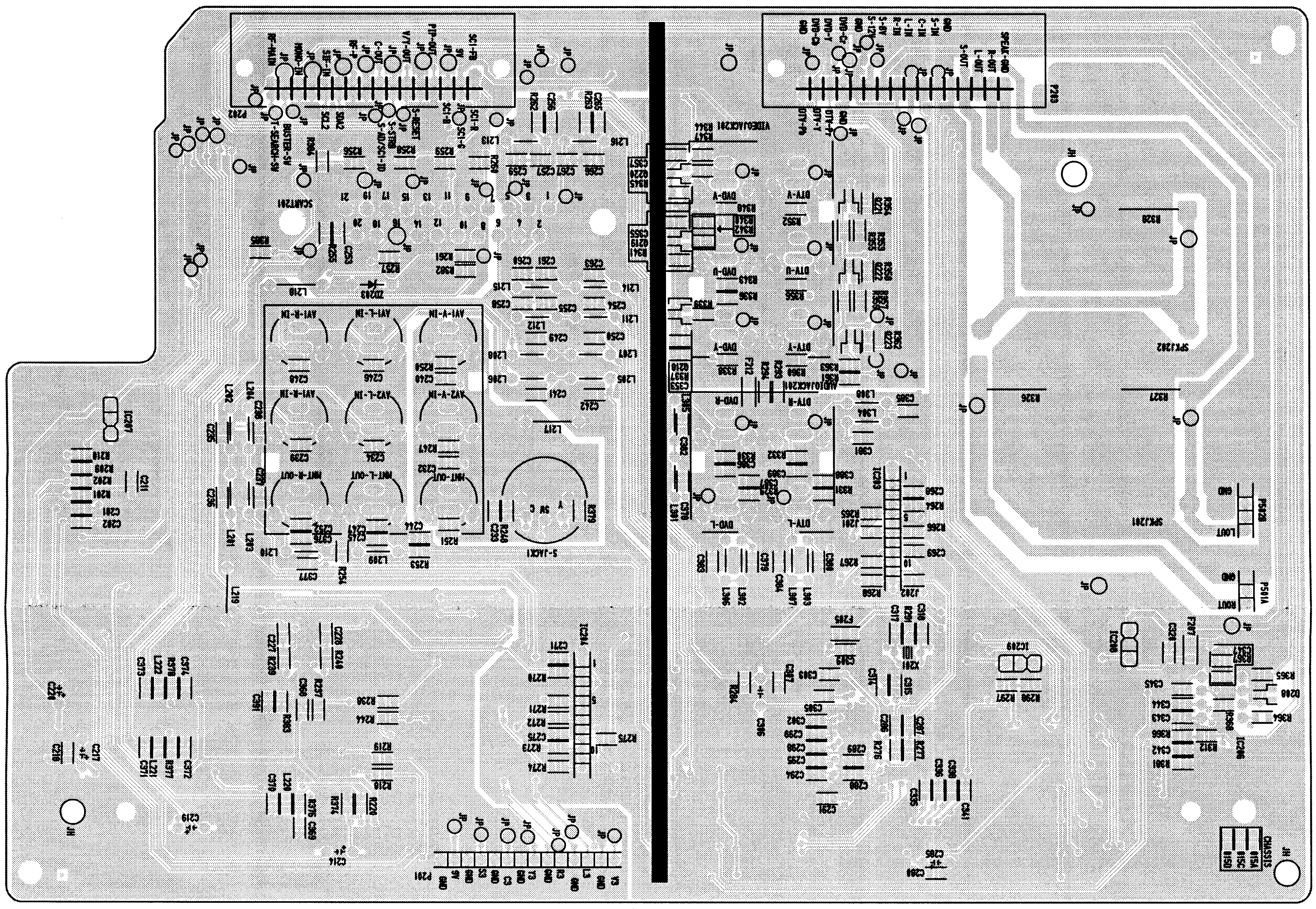
100HZ (BOTTOM)


P901A
P101A
GOUT
SPOT
1X
11V
GND
ROUT
BOUT
VGA-R
VGA-G
VGA-B
VGA-HS
VGA-VS
X501
X703
X702
F501
F701
F702
F703
F704
IC703
P214B
P213B
P212B
P211B
12V
VM-OUT
SPOT
VGA-SEL
DTV-SEL
HD
X-RAY
VD+
VD-
VPORT
I-LINE
D.F
E/V
ABL
FBP
RESET
OSD-R
OSD-G
OSD-B
FB
5V
PIP-V-IN
C-IN
Y/CVBS
SDA2
SCL2
JP
JH

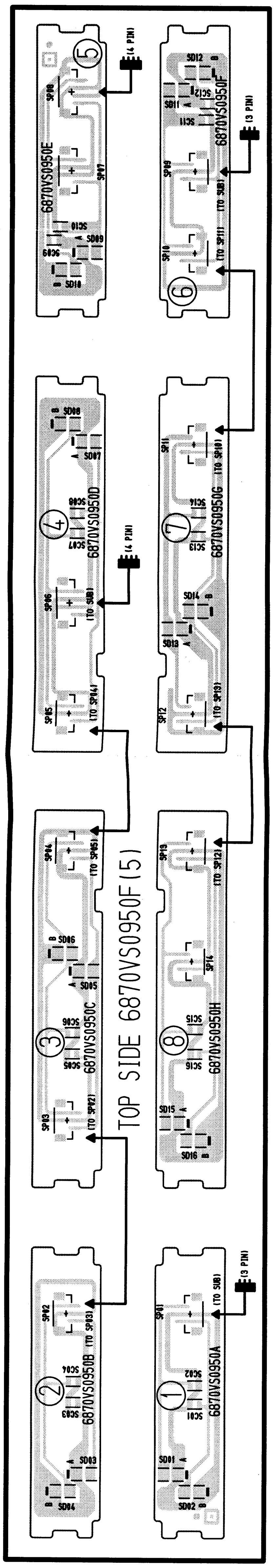
AV (TOP)


P201
IC202
IC204
IC205
IC201
IC203
S-JACK1
AUDIOJACK201
AVJACK1
SCART201
DVD-AUDIO
DTV-AUDIO
DVD-VIDEO
DTV-VIDEO
VIDEOJACK201
SPKJ201
SPKJ202
P202
P203
MP-015A
6870VS0925C(3)
020906 C.H.K

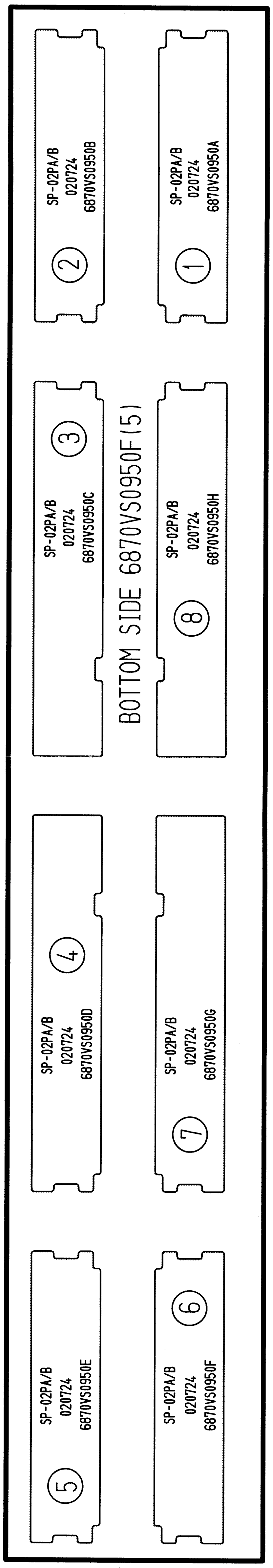
AV (BOTTOM)



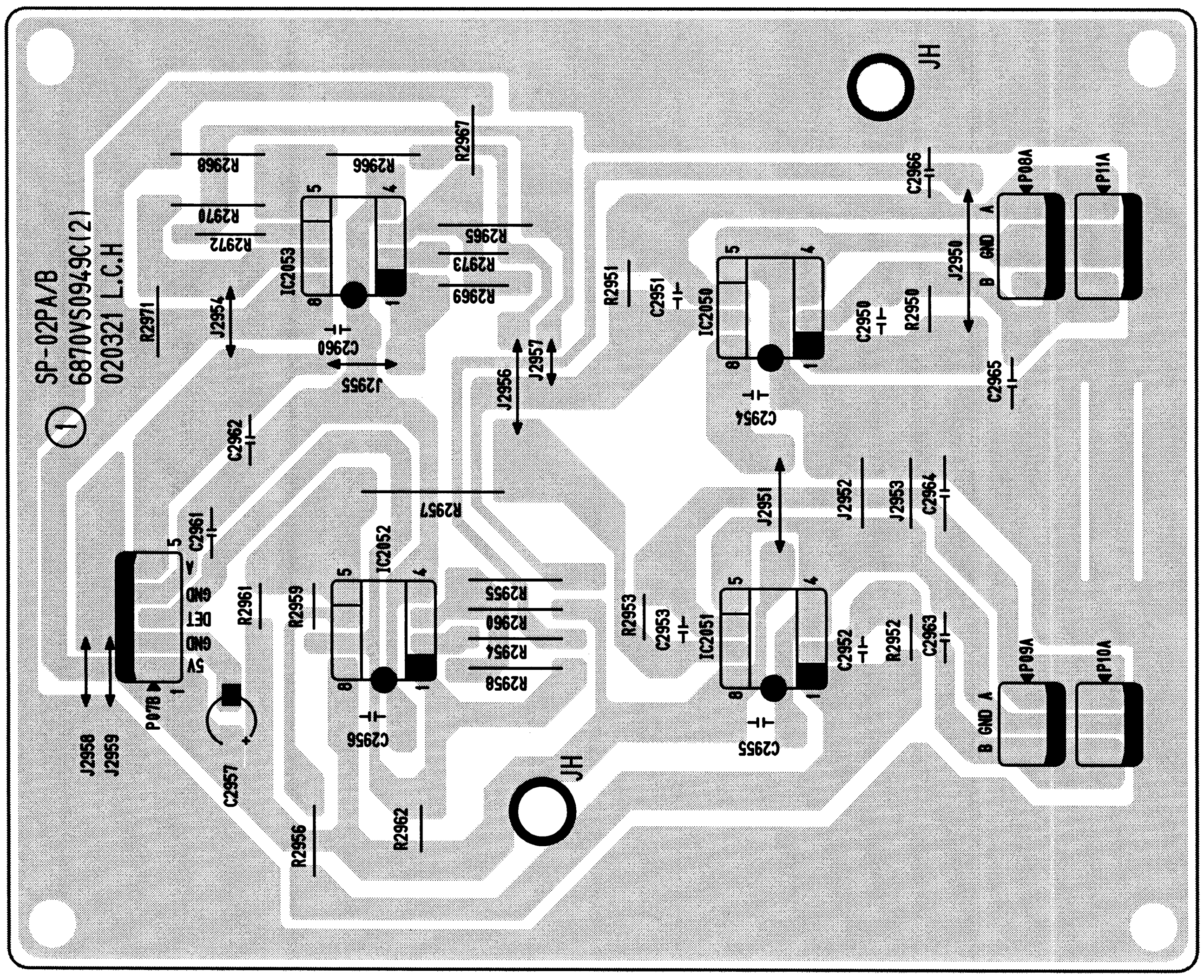
AUTO CVG SENSOR(TOP)


TOP SIDE 6870VS0950F(5)
①
6870VS0950A
②
6870VS0950B
③
6870VS0950C
④
6870VS0950D
⑤
6870VS0950E
⑥
6870VS0950F
⑦
6870VS0950G
⑧
6870VS0950H
(4 PIN)
(4 PIN)
(3 PIN)
(3 PIN)
(TO SUB)
(TO SUB)
(TO SUB)
(TO SP03)
(TO SP02)
(TO SP05)
(TO SP04)
(TO SP10)
(TO SP11)
(TO SP12)
(TO SP13)

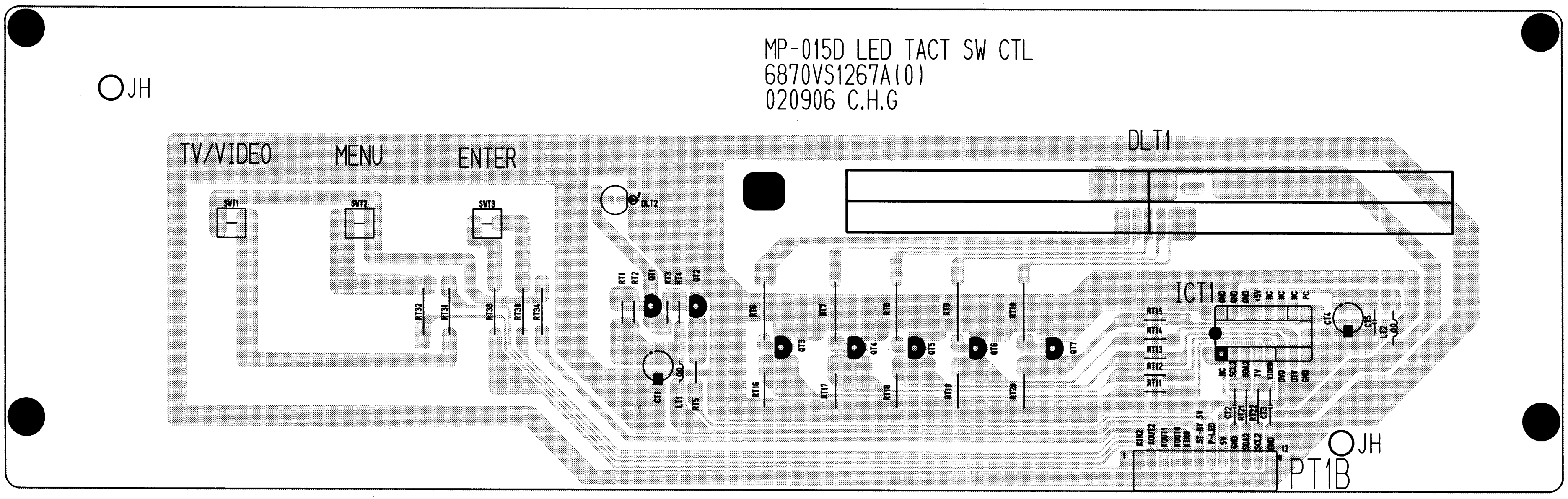
AUTO CVG SENSOR(BOTTOM)


BOTTOM SIDE 6870VS0950F(5)
②
SP-02PA/B
020724
6870VS0950B
①
SP-02PA/B
020724
6870VS0950A
③
SP-02PA/B
020724
6870VS0950C
⑧
SP-02PA/B
020724
6870VS0950H
④
SP-02PA/B
020724
6870VS0950D
⑦
SP-02PA/B
020724
6870VS0950G
⑤
SP-02PA/B
020724
6870VS0950E
⑥
SP-02PA/B
020724
6870VS0950F

CONVERGENCE INTERFACE

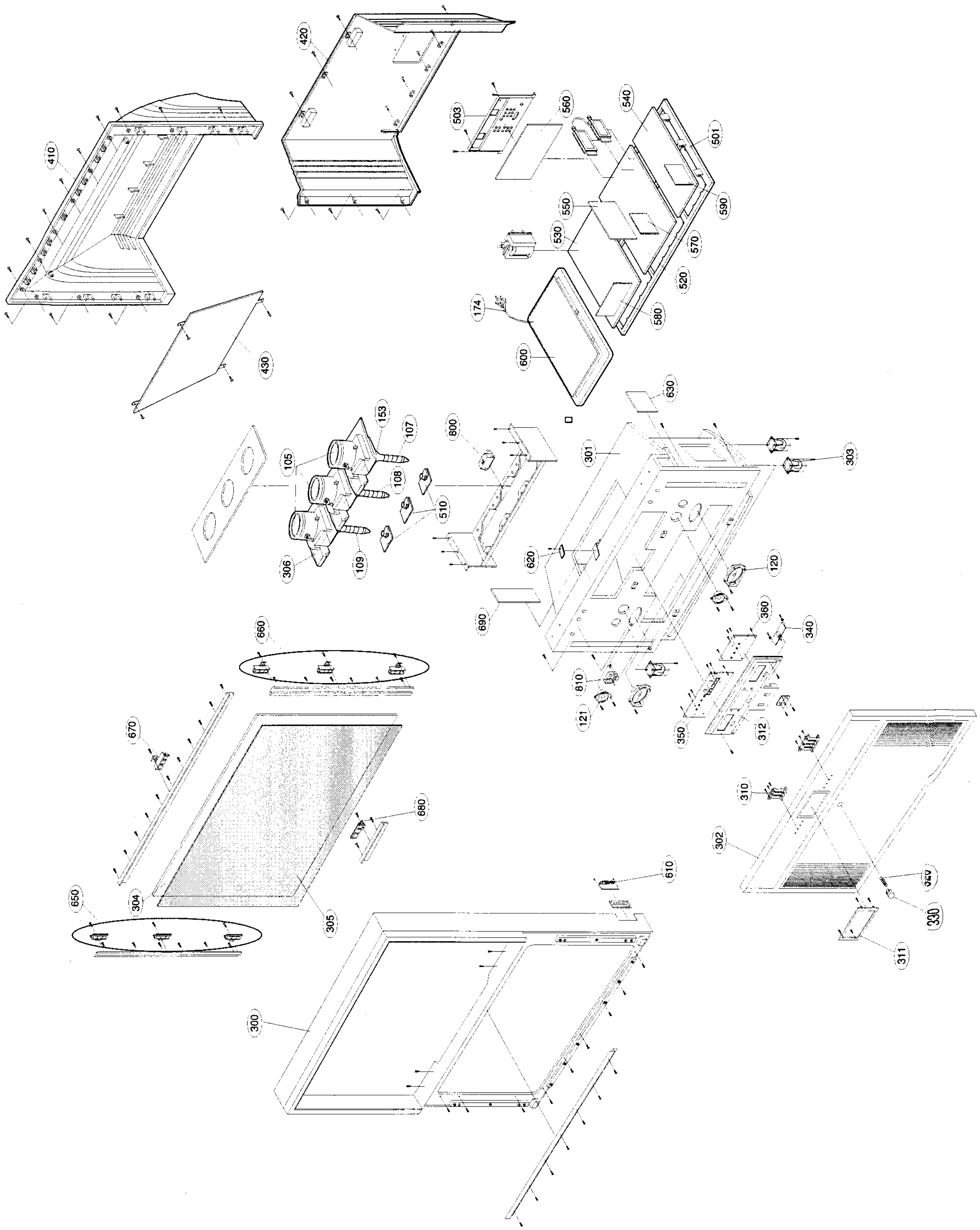

SP-02PA/B
6870VS0949C(2)
020321 L.C.H
①
JH
R2967
R2968
R2966
R2970
R2972
IC2053
R2965
R2973
R2969
R2971
J2954
C2960
J2955
J2956
J2957
R2951
C2951
IC2050
C2954
C2950
R2950
J2950
C2966
C2965
P08A
P11A
B GND A
C2962
C2961
R2957
J2951
J2952
J2953
C2964
5V
GND
DET
GND
P07B
R2961
R2959
IC2052
R2955
R2960
R2954
R2958
R2953
C2953
IC2051
C2952
R2952
C2963
P09A
P10A
C2956
C2955
C2957
J2958
J2959
R2956
R2962

LED TACT SW CONTROL


MP-015D LED TACT SW CTL
6870VS1267A(0)
020906 C.H.G
JH
TV/VIDEO
MENU
ENTER
SWT1
SWT2
SWT3
DLT2
DLT1
ICT1
CT1
LT1
PT1B

MEMO

EXPLODED VIEW(RE/RL-49NZ21RB)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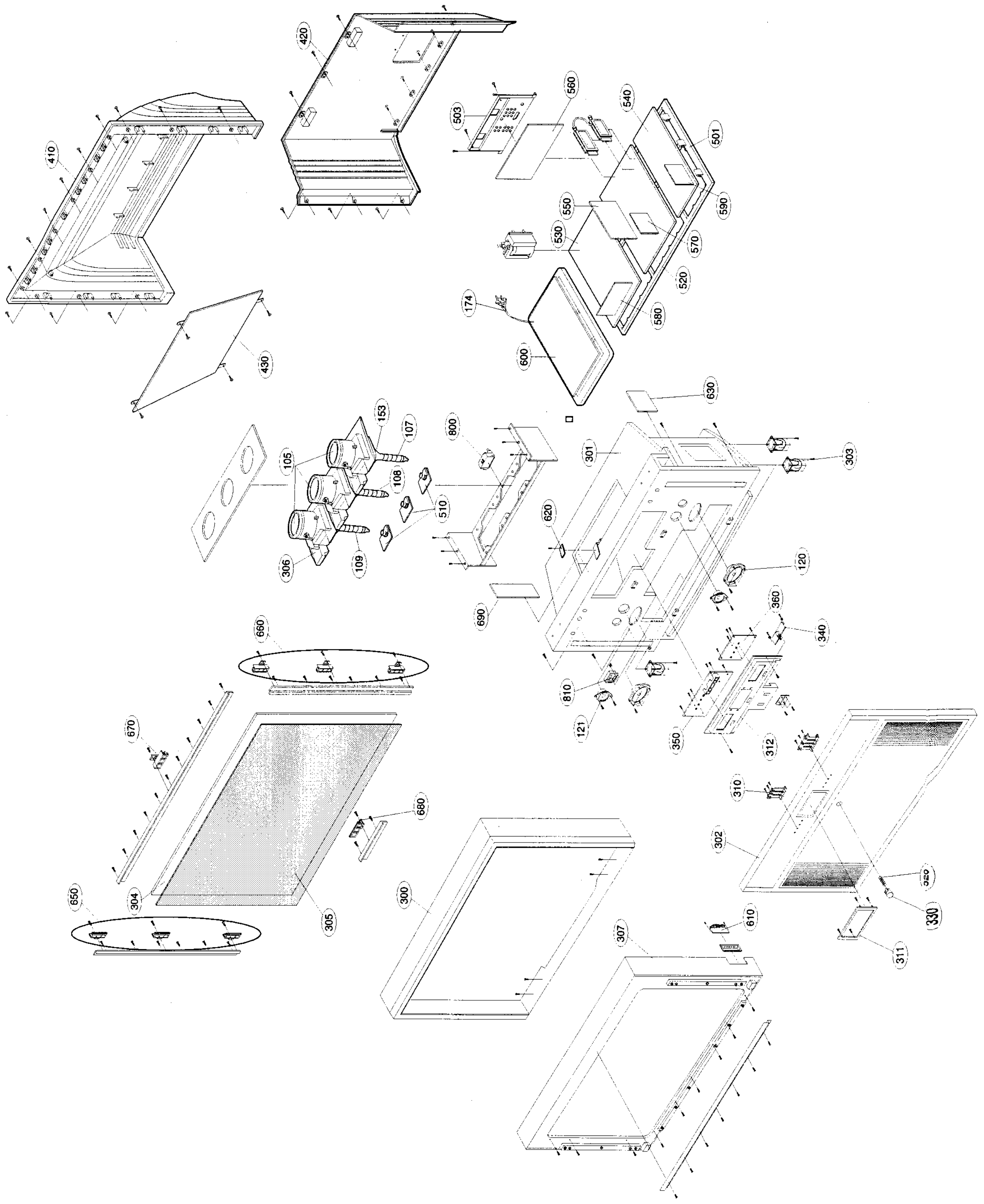
EXPLODED VIEW PARTS LIST

The components identified by mark ⚠ are critical for safety.
Replace only with part number specified.

No.	Part No.	Description
105	3680V00048A	LENS,SEKINOS SSM-100(60) LENS ASSEMBLY .
107	4810V00666A	BRACKET,PRT ASSY RED MP015C - 2H,3VM
108	4810V00666B	BRACKET,PRT ASSY GREEN MP015C - 2H,3VM
109	4810V00666C	BRACKET,PRT ASSY BLUE MP015C - 2H,3VM
120	6400VA0015A	SPEAKER,C151PX-373K14 LG C&D 8 OHM 15W/25W 86DB 154X104MM
121	120-237C	SPEAKER,C060T01K145A ESTEC 8 15/20 88 . 60X60 FULLRANGE
153	6150V-1007F	DY,QPC-E10901A 07 SHENG CHANG 31.5KHZ 2H
⚠ 174	174-322G	POWER,CORD KUK JE VDE 2400MM HOUSING BLACK .
	174-224G	POWER CORD H03VVH2-F VOLEX BSI 2000MM
300	3091V00A33G	CABINET ASSEMBLY,RT-49NZ21RB - MP015D .
301	3091V00458B	CABINET ASSEMBLY,RE-49NZ21RB - MP015C WOOD
302	3211V00087E	FRAME ASSEMBLY,FRONT LOWER RE-49NZ21RB DIGITAL 100HZ
303	4778V00012A	LEG,CASTER(WHEEL) . . .
304	3350V00016A	SCREEN,DNP OPTICAL PJTV X2-49W AS, IMPROVED . .
305	3790V00298Q	WINDOW, FILTER DNP X2-49W .
306	4980V00287B	SUPPORTER,ASSY NONE LENS&PRT PN-48A8
310	5020V00665A	BUTTON,RT-49NZ20H CONTROL SET
311	3550V00213A	COVER,INDEX ,ABS ,RN-49NZ10HA .
312	4810V00670A	BRACKET,CONTROL RN-49NZ20H SP02PB HIPS 40AF .
320	320-062J	SPRING,KNOB
330	5020V00393H	BUTTON RN-49NZ10H , SET
340	6871VSMA42A	PWB(PCB) ASSEMBLY,SUB PSW SP-02PA/B M/I PWR S/W
350	6871VSMN81A	PWB(PCB) ASSEMBLY,SUB CONT MP015D LED,RT49NZ21RB
360	6871VSMN82A	PWB(PCB) ASSEMBLY,SUB CONT MP015D LED,SUB
410	3809V00A15B	BACK COVER ASSEMBLY,RT-49NZ21RB - UPPER
420	3809V00A16C	BACK COVER ASSEMBLY,RT-49NZ21RB - LOWER
430	5018V00028A	MIRROR,PLASTIC (49W_R2) . . .
501	4810V00221G	BRACKET, MAIN PN-43A8 NP00PA NON NON
503	4810V00419G	BRACKET, A/V RE-56NZ21RB MP015D HIPS 51SF 3 SCART
510	6871VSMQ27A	PWB(PCB) ASSEMBLY,SUB PRT MP015D 49/56NZ21RB
520	6871VMN650A	PWB(PCB) ASSEMBLY,MAIN MP015D RE56NZ21RB
	6871VMN650B	PWB(PCB) ASSEMBLY,MAIN MP015D RL56NZ21RB
530	6871VDM892A	PWB(PCB) ASSEMBLY,DEFLECTION MAIN2 MP015D RT49NZ21
540	6871VSMN05B	PWB(PCB) ASSEMBLY,SUB CVG MP015D CONV-OUT
550	6871VSM964C	PWB(PCB) ASSEMBLY,SUB MP015C 100HZ,W/O DF
560	6871VSMQ18A	PWB(PCB) ASSEMBLY,SUB A/V MP015D RE56NZ21RB
570	6871VSMN85A	PWB(PCB) ASSEMBLY,SUB SUB MP015D MICOM,RT49NZ21
580	6871VSMA06A	PWB(PCB) ASSEMBLY,SUB VM MP015A .
590	6871VSMN06B	PWB(PCB) ASSEMBLY,SUB CVG MP015D D-CON
600	6871VPMA05A	PWB(PCB) ASSEMBLY,MAIN2 MP015D NARROW,RE/RL
610	6871VSMN84A	PWB(PCB) ASSEMBLY,SUB MP015D SIDE A/V,RT49NZ21
620	6871VSMN83A	PWB(PCB) ASSEMBLY,SUB P/AMP MP015D RT49NZ21RB
630	6871VSMA53A	PWB(PCB) ASSEMBLY,SUB SUB SP-02PA/B CVG-INTERFACE M/I
650	6871VSMB32B	PWB(PCB) ASSEMBLY,SUB CVG SP-02PA/B 49 C/G RIGHT SENSOR
660	6871VSMB32A	PWB(PCB) ASSEMBLY,SUB CVG SP-02PA/B 49 C/G LEFT SENSOR
670	6871VSMB32C	PWB(PCB) ASSEMBLY,SUB CVG SP-02PA/B 49 C/G TOP SENSOR
680	6871VSMB32D	PWB(PCB) ASSEMBLY,SUB CVG SP-02PA/B 49 C/G BOTTOM SENSOR
690	6871VSM974E	PWB(PCB) ASSEMBLY,SUB MP015D HARMONICS
800	4410Z-A001F	BLOCK MP015A HVF30-1111A A001A,C
810	180-836K	FOCUS PACK,W18-601-02 YINYANG 180-836H

EXPLODED VIEW(RE/RL-56NZ21RB)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EXPLODED VIEW PARTS LIST

The components identified by mark ⚠ are critical for safety.
Replace only with part number specified.

No.	Part No.	Description
105	3680V00048A	LENS,SEKINOS SSM-100(60) LENS ASSEMBLY .
107	4810V00666A	BRACKET,PRT ASSY RED MP015C - 2H,3VM
108	4810V00666B	BRACKET,PRT ASSY GREEN MP015C - 2H,3VM
109	4810V00666C	BRACKET,PRT ASSY BLUE MP015C - 2H,3VM
120	6400VA0015A	SPEAKER,C151PX-373K14 8 OHM 15W/25W 86DB 154X104MM
121	120-237C	SPEAKER,C060T01K145A ESTEC 8 15/20 88 . 60X60 FULLRANGE
153	6150V-1007F	DY,QPC-E10901A 07 SHENG CHANG 31.5KHZ 2H
⚠ 174	174-322G	POWER CORD VDE 2400MM HOUSING
300	3091V00A35D	CABINET ASSEMBLY,MP015D UPPER
301	3091V00449B	CABINET ASSEMBLY,MP015D 3 SCART
302	3211V00086C	FRAME ASSEMBLY,FRONT LOWER RE-56NZ21RB LG(SILVER)
303	4778V00012A	LEG,CASTER HN-64A10 POLY URETHANE 55.4MM
304	3350V00017A	SCREEN,DNP NON PJT NON NON
305	3790V00298R	WINDOW,FILTER X2-56W NON NON
306	4980V00287D	SUPPORTER ASSY, LENS&PRT
307	3091V00A36A	CABINET ASSEMBLY,NON XCANVAS
310	5020V00665B	BUTTON,CONTROL ABS, HF-380 - 3KEY
311	3550V00213A	COVER,INDEX ,ABS
312	4810V00670A	BRACKET,CONTROL HIPS 40AF .
320	320-062J	SPRING,KNOB
330	5020V00393H	BUTTON
340	6871VSMA42A	PWB ASSEMBLY,PSW SP-02PA/B M/I PWR S/W
350	6871VSMN81A	PWB ASSEMBLY,CONT MP015D LED,RT49NZ21RB
360	6871VSMN82B	PWB ASSEMBLY,MP015D LED-SUB,RE56
410	3809V00A22B	BACK COVER ASSEMBLY,56NZ21RB - UPPER
420	3809V00A23C	BACK COVER ASSEMBLY,56NZ21RB - 3SCART
430	5018V00029A	MIRROR,PLASTIC NON NON . PLASTIC(56W_R2)
501	4810V00221G	BRACKET,MAIN PN-43A8 NP00PA HIPS-40AF .
503	4810V00419G	BRACKET,REAR RE-56NZ21RB MP-015D
510	6871VSMQ27A	PWB ASSEMBLY,PRT MP015D 49/56NZ21RB
520	6871VMN650A	PWB ASSEMBLY,MAIN MP015D RE-56NZ21RB
	6871VMN650B	PWB ASSEMBLY,MAIN MP015D RL-56NZ21RB
530	6871VDM892A	PWB ASSEMBLY,DEFLECTION MAIN2 MP015D
540	6871VSMN05B	PWB ASSEMBLY,CVG MP015D CONV-OUT
550	6871VSM964C	PWB ASSEMBLY,100HZ,W/O DF
560	6871VSMQ18A	PWB ASSEMBLY,A/V MP015D
570	6871VSMN85A	PWB ASSEMBLY,MP015D MICOM
580	6871VSMA06A	PWB ASSEMBLY,VM
590	6871VSMN06B	PWB ASSEMBLY,CVG MP015D D-CON
600	6871VPMA05A	PWB ASSEMBLY,MAIN2 MP015D NARROW,RE/RL
610	6871VSMN84B	PWB ASSEMBLY,MP015D SIDE A/V, RE56
620	6871VSMN83A	PWB ASSEMBLY,P/AMP MP015D
630	6871VSMA53A	PWB ASSEMBLY,CVG-INTERFACE M/I
650	6871VSMB45B	PWB ASSEMBLY,CVG 56 AUTO C/G RIGHT SENSOR
660	6871VSMB45A	PWB ASSEMBLY,CVG AUTO C/G LEFT SENSOR
670	6871VSMB45C	PWB ASSEMBLY,SCVG SP-02PB 56 AUTO C/G TOP SENSOR
680	6871VSMB45D	PWB ASSEMBLY,CVG SP-02PB 56 AUTO C/G BOTTOM SENSOR
690	6871VSM974E	PWB ASSEMBLY,MP-015D HARMONICS
800	4410Z-A001F	BLOCK,MP015A HVF30-1111A A001A,C
810	180-836K	FOCUS PACK,W18-601-02 YINYANG 180-836H

SVC. SHEET : 3854VA0094D-S1
3854VA0094D-S2
3854VA0094D-S3